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# SOUTHWEST ARKANSAS



A PLAN FOR CONSERVING AND DEVELOPING  
THE RESOURCES OF THE AREA

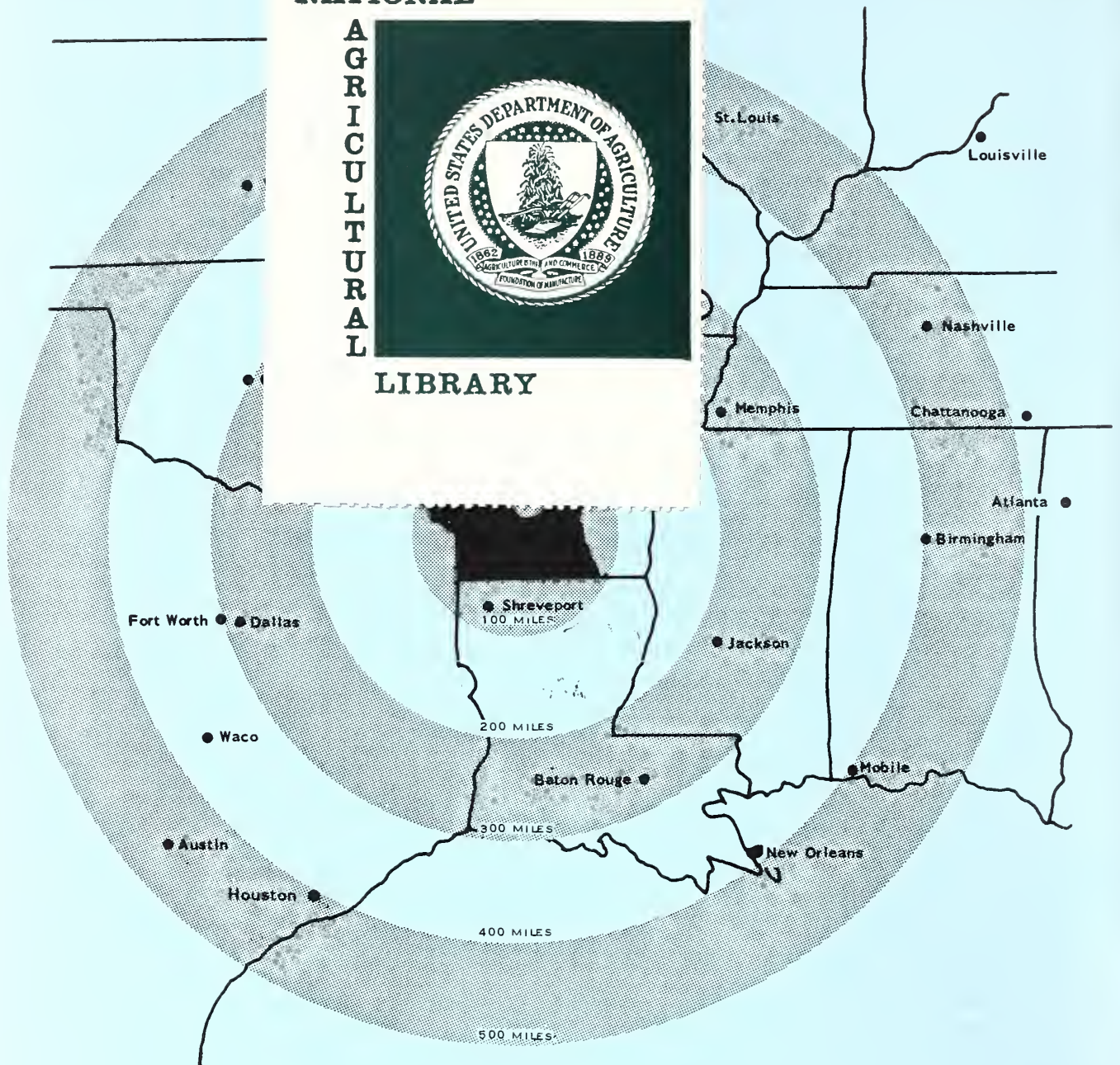
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SOUTHWEST ARKANSAS RC&D PROJECT SPONSORS  
IN COOPERATION WITH  
U. S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE  
AND  
OTHER FEDERAL, STATE, AND LOCAL AGENCIES

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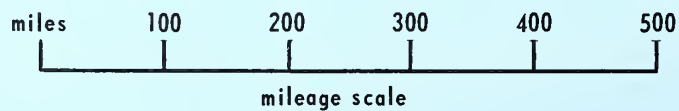
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AND DEVELOPMENT DISTRICT IN RELATION TO THE MID-CONTINENT REGION



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U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
LITTLE ROCK, ARKANSAS





SOUTHWEST ARKANSAS  
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT  
PLAN

SPONSORS

Calhoun County	Calhoun County Conservation District
Columbia County	Columbia County Conservation District
Dallas County	Dallas County Conservation District
Hempstead County	Hempstead County Conservation District
Howard County	Mine Creek Conservation District
Lafayette County	Lafayette Conservation District
Little River County	Little River Conservation District
Miller County	Miller County Conservation District
Nevada County	Nevada County Conservation District
Ouachita County	Ouachita Conservation District
Sevier County	Cossatot Conservation District
Union County	Union County Conservation District
Little River County Rural Development Authority	
Sevier County Rural Development Authority	
Southwest Arkansas Planning and Development District	

Prepared under Authority of the Food and Agriculture  
Act of 1962 (Public Law 87-703).

U. S. Department of Agriculture  
Soil Conservation Service  
Little Rock, Arkansas





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## PREFACE

The concept of a resource conservation and development project is that people become engaged in the development and use of all resources -- human and natural -- through self-government, conservation and development at the local level.

The Southwest Arkansas RC&D Project follows this concept and brings together interested local, county, state and federal people in a cooperative effort to provide assistance to local people in solving the area's problems. Efforts will be directed toward creating a better environment for living, working and playing.

Section 102 of the Food and Agriculture Act of 1962, Public Law 87-703, authorizes the Secretary of Agriculture "to cooperate with federal, state, territorial and other public agencies in developing plans for a program of land conservation and land utilization and to assist in carrying out such plans". The Soil Conservation Service has been assigned primary leadership in this program.

In 1968, an application was submitted for a RC&D project covering 12 counties in Southwest Arkansas, with the boundaries of the area to be coterminous with the Southwest Arkansas Planning and Development District. In October of 1969 the Rural Renewal Program, administered by USDA, was merged with RC&D projects. Two of the counties in the RC&D application were in the Rural Renewal Program. When the Rural Renewal Program was abolished this created a two-county RC&D project consisting of Little River and Sevier Counties. The sponsors then requested that the area be enlarged to include the other 10 counties. The request was granted and in March of 1970 the project area was enlarged to the present size.

Sponsors of the Southwest Arkansas RC&D Project are the Southwest Planning and Development District, county governments, conservation districts, and rural development authorities.

This plan shows (1) some of the problems and needs of the area; (2) potentials for development; (3) project objectives; and (4) the economic and social benefits.

The plan is "open-ended" and may be modified to meet changing needs. It will be reviewed at least annually and revised as appropriate to reflect changing conditions, objectives and new project measures that the local people want to undertake.



# Section I

## **SUMMARY**



## SUMMARY

### DESCRIPTION

The Southwest Arkansas Resource Conservation and Development Project is made up of twelve counties covering an area of 8,161 square miles. It shares a common boundary with the Southwest Arkansas Planning and Development District. The major land resource areas in the project are the Forested Coastal Plains, Bottomlands and Terraces, Texas Blackland Prairies and the Ouachita Mountains. The elevation varies from about 59 to 1700 feet. About 73 percent of the area is in forest, 17 percent in grass, 5 percent in cropland, 2 percent in water and 3 percent in urban and build up areas.

Sponsors of the project are county governments, conservation districts, rural development authorities and the Southwest Arkansas Planning and Development District.

### SOCIAL CONDITIONS AND COMMUNITY FACILITIES

The area had a 1.2 percent decrease in population from 1960 to 1970 due mainly to job shortages, low incomes, substandard housing, inadequate schools and inadequate medical facilities. Inadequate water and sewer systems in many of the smaller towns and communities also were contributing factors.

Indications show the population to be on the increase. New homes are being built and older homes remodeled through the FHA and other financing programs. The two vocational training schools (El Dorado and Hope) and the technical institute at Camden provide training in many fields. New industry has moved into the area and others have expanded, making more job opportunities.

### NATURAL RESOURCES

Forestry - Forest fires are a problem. During the period 1965 through 1969 an area of over 65,000 acres burned in the area. An estimated 700,000 acres need planting and an additional 800,000 acres need timber stand improvement. Prices for wood products from small merchantable trees are generally lower in Southwestern Arkansas than in many areas of the South, indicating a need for better markets for trees of fencepost and pulpwood size.

The greatest potential for increasing yields lies with small landowners since industrial and public forest lands are already at high production.



Cropland - Water management practices such as improved land drainage, irrigation and land leveling are needed on about 64,000 acres and erosion control practices are needed on about 50,000 acres. Contour cultivation is practiced on only a small percent due to the difficulty of cultivating with multi-row equipment. Soybean acreage continues to increase in the hill land and better conservation treatment, such as minimum tillage, is needed to control erosion.

Grassland - There are over 500,000 acres of improved pasture in the area, but much of this needs to be renovated or re-established to more desirable plants. Fertilization of pastures with poultry manure from the expanding poultry industry has been a major factor in the improvement of pastures and the resulting increase in cattle numbers. This trend is expected to continue.

Fish Farming - Fish farming is expanding. There are 170 acres now in bait fish and 277 acres in catfish production. There are over 11,000 farm ponds that could be used for growing fish.

Water - Much of the agriculture water management is dependent upon the development of 13 potential PL-566 watersheds. Several of these sites could also supply needed municipal and industrial water. Millwood Reservoir, constructed primarily for flood control, has storage added for municipal and industrial use. The availability of this water adds greatly to the potential development of nearby counties.

Fish and Wildlife - The change in farming operations has decreased the population of farm game such as bobwhite and doves. Other species normally found in forest areas such as deer and squirrel have increased. Food plots for bobwhite, rabbits and doves are needed on the upland areas. Several of the bottomland areas offer some potential for the development of waterfowl habitat. The hundreds of farm ponds in the area are capable of producing thousands of pounds of fish, when properly managed.

Minerals - Petroleum products account for about 47 percent of the total mineral value; however some of the oil wells are now failing. Other minerals listed in the order of importance are bromine, cement, gypsum, sand and gravel, clays and stone. Several minerals of lesser value can be developed.

## RECREATION AND TOURISM

Outdoor recreation facilities are generally inadequate. This is especially true of the water oriented facilities for weekends, holidays and vacation seasons. The areas offering the greatest potential for development are near the lakes and streams in the northwest part of the area.

## INDUSTRY

A majority of the manufacturing jobs and facilities are located in Union, Ouachita, Columbia and Miller Counties. Small industrial plants of light assembly and apparel operations plus numerous small operations processing local lumber and agricultural products are located in other counties. The lack of municipal water has kept industry from locating in some of the small towns. Factors favorable for industrial expansion include an abundance of labor, good transportation facilities, vocational technical schools, favorable attitudes and an abundance of natural resources.

## OTHER

The general appearance of the landscape is often marred by the presence of litter, junk, erosion and unsightly vegetation. There is a great need to improve the solid waste and sewerage systems, but additional cost sharing will be required.

In addition to conserving and developing the natural resources of the area the sponsors objectives are to improve living conditions with better housing, community facilities, schools, medical treatment, job opportunities and incomes.

The Steering Committee has approved 143 project measures or community actions directed to such things as controlling erosion on roadsides and other public use areas, controlling floods on agriculture lands and urban areas, developing water based recreation facilities, developing areas for wildlife, improving agricultural water management, improving city water and sewer systems, developing rural water systems, improving city parks, improving solid waste disposal systems and securing better health care. Some of the projects are under construction and a few are already completed. New actions will be initiated as needed.



## Section II

# DESCRIPTION OF AREA

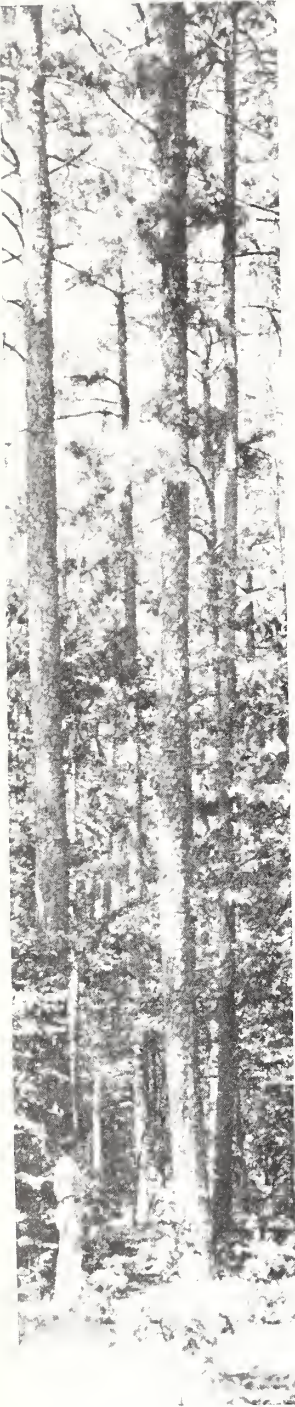


# The Project Area





# Present Land Use



**Forestland**  
73%



**Grassland**  
17%



**Cropland**  
4.5%



**Other**  
5.5%



# DESCRIPTION OF AREA

## LOCATION AND SIZE

Twelve counties in Southwestern Arkansas make up the project area. The counties are: Calhoun, Columbia, Dallas, Hempstead, Howard, Lafayette, Little River, Miller, Nevada, Ouachita, Sevier and Union. The project area is bounded on the west by Oklahoma and Texas and on the south by Louisiana. The project area extends into the Ouachita Mountains to the north.

The project area is approximately 30 miles from Shreveport, Louisiana; 60 miles from Little Rock, Arkansas; and 150 miles from Dallas, Texas. The project area covers 8,161 square miles; approximately one-sixth of the total area of Arkansas.

## POPULATION

According to the 1970 census, 224,571 people, or 11 percent of the state's population, live in the twelve counties. Minority groups account for about 32 percent of the total population. The area is predominately rural with El Dorado and Texarkana being the only cities in the project area with 20,000 or more population.

## CLIMATE

The climate is warm and humid with the temperature sometimes exceeding 100 degrees during July and August. The winters are usually mild with a few short periods of cold weather. Temperatures have been recorded below zero; however, these periods are usually limited to two or three days.

The average growing season is about 235 days extending from mid March to mid November. Rainfall averages approximately 52 inches annually. The driest months are September and October. The wettest months are December and January. Short periods of dry weather that reduce crop yields are frequent over small areas; occasionally droughts of longer duration involving large areas occur.

## ELEVATION

The elevation varies from approximately 59 feet above sea level in the southeastern corner to about 1,700 feet in the northern part of the project area.



# Cropland





# Improved Cultural Practices Increase Farm Income



## LAND USE

TOTAL AREA - 5,223,040 Acres.

FOREST LAND - 3,790,000 Acres. Acreage covered by at least 10% stocking forest trees.

GRASSLAND - 870,515 Acres. Land planted to tame pasture grasses as well as land on which the plant cover is principally native grasses, forbs, and shrubs valuable for forage.

CROPLAND - 237,592 Acres. All cultivated land planted to row crops, close grown crops such as small grains and idle land in rotation.

URBAN & BUILT UP AREAS - 179,045 Acres. Cities, villages and other built up areas of more than 10 acres; industrial sites, cemeteries, airports, golf courses and similar areas; and road and railroad rights of ways.

WATER - 102,480 Acres. Includes ponds, reservoirs, lakes, streams and rivers.

OTHER LAND - 43,408 Acres. Includes such uses as farmsteads, farm roads, feed lots, ditch banks, fence rows, gravel pits, mined areas, rural churches, cemeteries and similar miscellaneous kinds of uses.

Source:

Arkansas Conservation Needs Inventory (1969)  
and  
U. S. Forest Service

The land use within the project area is somewhat stable in comparison to other sections of the state. However, there are some changes underway, and some of these changes are presenting environmental and economic problems. This is especially true in the case of sloping grassland areas being converted to row-crop farming (soybeans); the conversion of forest land, cropland and grassland areas to urban and industrial uses; and developments on flood plains and imperfectly drained areas.

Compatible secondary or even tertiary uses are on the increase and will no doubt be applied at an accelerated rate. Road construction, including interstate highways, is having its effect on land use patterns. Unregulated strip developments and their associated facilities such as septic tanks are having an increasing effect on land use.

## LAND RESOURCE AREAS

The major land resource areas in the project are the Forested Coastal Plains, bottomlands and terraces, Texas Blackland Prairies, and the Ouachita Mountains.

The Forested Coastal Plains soils occur in all twelve counties and make up about 61 percent of the entire project area. These soils are derived from marine deposits of sand, silt, and clay. They occur on nearly level to moderately sloping landscapes. They are generally devoted to forestland and pasture with a few small areas of cropland.

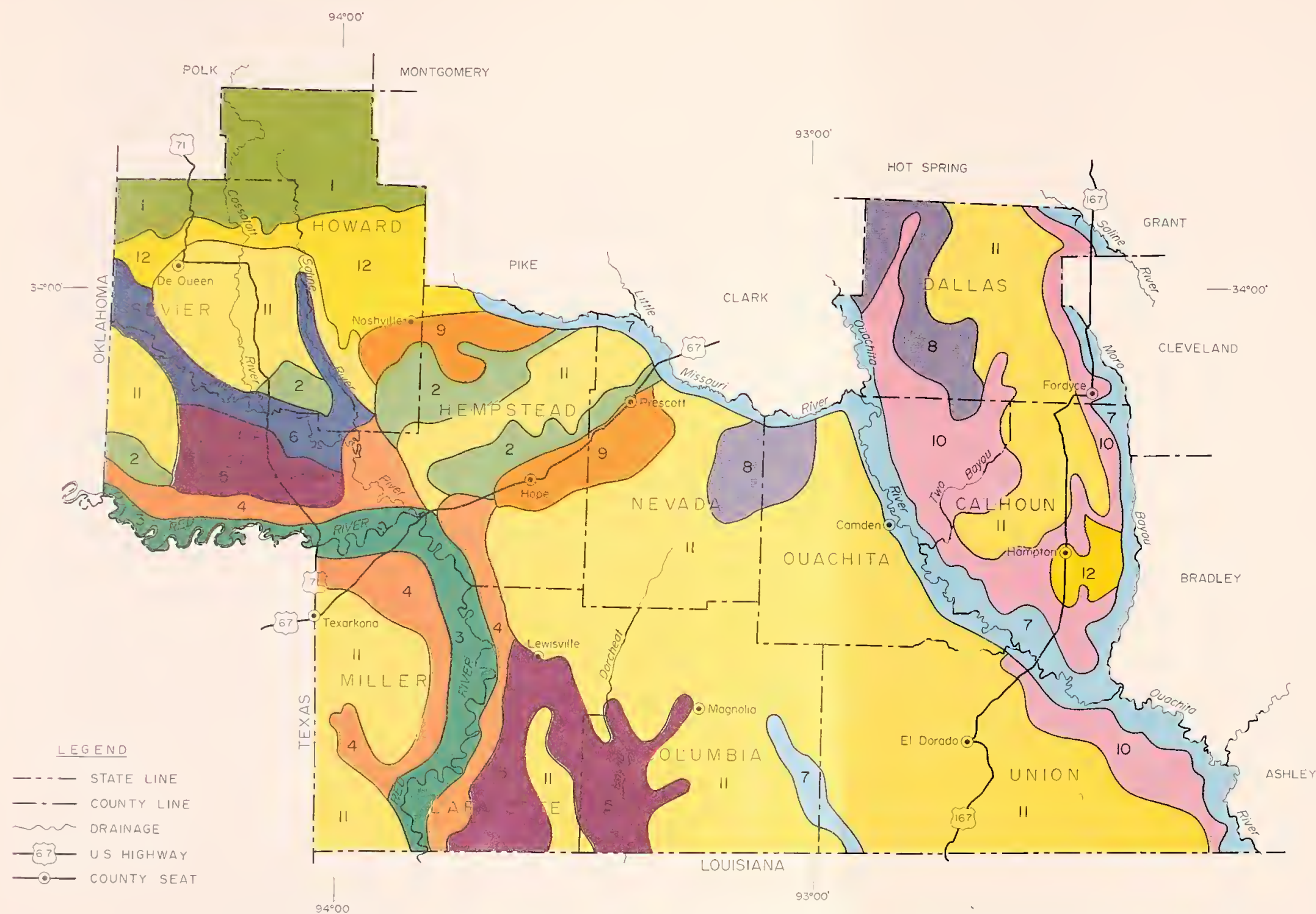
Most of the bottomland and terrace soils occur along or in proximity to the Red and Ouachita Rivers. These soils make up about 24 percent of the area. They are derived from sediments washed down from surrounding uplands and occur on level to nearly level landscapes. The Red River bottomland soils are used primarily for cropland and pasture. The principle crops grown are soybean and cotton with a few acres devoted to rice and peanuts. Due to frequent flooding, the Ouachita River bottomlands are used mostly for forestland and pasture with some of the less hazardous areas being planted to row crops.

The Texas Blackland Prairie soils occur in Hempstead, Howard, Nevada, Little River, and Sevier Counties and make up about eight percent of the area. These soils are derived from calcareous marls and chalks and occur on gently to moderately sloping landscapes. These soils are used primarily for pasture and cropland. Most of the area in cropland is used for the production of soybeans.

The Ouachita Mountain soils occur in Howard and Sevier Counties and make up about seven percent of the area. These soils are derived primarily from acid sandstones and shales and occur on gently sloping to steep and mountainous landscapes. Their main use is for forestland with a few small areas cleared and planted to pasture.

(See map on following page for more detailed soil descriptions.)





## LEGEND

### OUACHITA MOUNTAINS

**1** Linker-Pickens Association: Deep and shallow, well drained, moderately permeable, loamy soils on sandstone and shale uplands.

### TEXAS BLACKLAND PRAIRIES

**2** Oktibbeha-Sumter Association: Moderately deep and shallow, moderately well drained, slowly permeable, clayey soils on chalk uplands.

### BOTTOMLANDS AND TERRACES

**3** Norwood-Miller Association: Deep, well drained and moderately well drained, moderately and slowly permeable, loamy and clayey soils on bottomlands.

**4** Perry-Portland Association: Deep, somewhat poorly drained, very slowly permeable, clayey soils on bottomlands.

**5** Wrightsville-Acadia Association: Deep, somewhat poorly drained, slowly permeable, clayey soils on bottomland and terraces.

**6** Ozan-Toine Association: Deep, well drained and poorly drained, moderately and slowly permeable soils, loamy soils on bottomlands.

**7** Ouachita-Amy Association: Deep, somewhat poorly drained, slowly permeable, clayey soils on bottomlands.

### FORESTED COASTAL PLAINS

**8** Alaga-Kirvin Association: Deep, excessively drained and well drained, rapid and slowly permeable, sandy and clayey soils on uplands.

**9** Tiak-Mayhew Association: Deep, somewhat poorly to poorly drained, very slowly permeable, clayey soils on uplands.

**10** Amy-Smithton Association: Deep, poorly drained, slowly permeable, loamy soils on broad flats.

**11** Kirvin-Cahaba Association: Deep, well drained, moderately slow and moderately permeable, loamy and clayey soils on uplands.

**12** Saffell-Sacul Association: Deep, moderately well drained, moderately and slowly permeable, loamy and clayey soils on uplands.

## GENERAL SOIL MAP SOUTHWEST ARKANSAS

### RESOURCE CONSERVATION AND DEVELOPMENT PROJECT

CALHOUN, COLUMBIA, DALLAS, HEMPSTEAD,  
HOWARD, LAFAYETTE, LITTLE RIVER, MILLER,  
NEVADA, OUACHITA, SEVIER AND UNION COUNTIES,  
ARKANSAS

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
LITTLE ROCK, ARKANSAS

10 0 10 20 30 40 MILES

APPROXIMATE SCALE

1:1,000,000 or 1 INCH = 15.783 MILES

COMPILED FROM 1:250,000 SCALE USGS QUADS

JUNE 1970

4-R-29,484

June 1970

4-R-29,457



# SOIL ASSOCIATION DESCRIPTIONS

**1 LINKER-PICKENS ASSOCIATION:** Deep and shallow, well drained, moderately permeable, loamy soils on sandstone and shale uplands. Linker 40%, Pickens 40%, (inclusions of Hartsells, Rockland and Toine 20%).

Linker soils have grayish-brown sandy loam surfaces and yellowish-red or red sandy clay loam subsoils. They are suited for pasture and hayland production. They have a moderately high potential for the production of southern pine, but have severe equipment limitations where steep slopes or stony surfaces occur. They have slight to moderate limitations for fish and wildlife developments. They have moderate to severe limitations for nonfarm uses because of steep slopes and bedrock within 4 feet of the surface.

Pickens soils are less than 20 inches thick over sandstone or shale bedrock. They have grayish-brown silty or sandy surfaces and yellowish-brown fine sandy loam or sandy clay loam subsoils. They are suited for pasture production. They have moderate potential for the production of southern pine, but have severe equipment limitations where steep slopes or stony surfaces occur. They have slight to moderate limitations for fish and wildlife developments. They have severe limitations for nonfarm uses because of bedrock within 20 inches of the surface and steep slopes.

**2 OKTIBBEHA-SUMTER ASSOCIATION:** Moderately deep and shallow, moderately well drained, slowly permeable, clayey soils on chalk uplands. Oktibbeha 40%, Sumter 35% (inclusions of Demopolis, Sessum, Fipling, Terouge and Tusculmbia 25%).

Oktibbeha soils have brown to dark brown silt loam or clay surfaces and red clay subsoils mottled with yellow and gray in the lower part. Chalk bedrock usually occurs at about 4 feet. They are suited for pasture and hayland production. Erosion is a severe hazard. They have a moderate potential for the production of southern pine. They have slight to moderate limitations for fish and wildlife developments. They have moderate to severe limitations for nonfarm uses because of high shrink-swell, slow permeability, erosion hazard and moderately shallow depth to chalk.

Sumter soils have a light gray to yellowish-brown clay surface and pale yellow to pale olive clay subsoils grading to chalk bedrock at about 3 feet. They are suited for native range. Erosion is a very severe hazard. They are suited for production of red cedar. They have moderate to severe limitations for fish and wildlife development because of shallow depth to chalk and erosion hazard. They have severe limitations for nonfarm uses because of high shrink-swell, slow permeability, erosion hazard and shallow depth to chalk.

**3 NORWOOD-MILLER ASSOCIATION:** Deep, well drained and moderately well drained, moderately and slowly permeable, loamy and clayey soils on bottomlands. Norwood 50%, Miller 20% (inclusions of Portland, Perry, Rilla and Lonoke 30%).

Norwood soils have brown to reddish-brown sandy loam surfaces overlying stratified sands and silts. They are suited for pasture production. They have a high potential for the production of cottonwood. They have slight to severe limitations for fish and wildlife developments, especially for water development, due to rapid permeability. They have moderate to severe limitations for nonfarm uses because of overflow hazard.

Miller soils have dark reddish-brown clay surface and reddish-brown or red clay subsoils. They are suited to intensive use for crops when protected from overflow. They are suited to pasture and hay production, especially alfalfa. They have a high potential for the production of southern hardwoods, but have severe equipment limitations. They have a high potential for fish and wildlife developments. They have severe limitations for nonfarm uses because of overflow hazard, slow permeability and high shrink-swell.

**4 PERRY-PORTLAND ASSOCIATION:** Deep, somewhat poorly drained, very slowly permeable, clayey soils on bottomlands. Perry 40%, Portland 35% (inclusions of Lonoke, Rilla, Miller and Sharkey 25%).

Perry soils have a dark gray clay surface, 20 to 40 inches thick, over reddish-brown clay material. They are suited for intensive crop use when protected from overflow and adequately drained. They have a moderately high potential for the production of southern hardwoods, but have severe equipment limitations. They have a high potential for fish and wildlife developments. They have severe limitations for nonfarm uses because of poor drainage, slow percolation rate, high shrink-swell and overflow hazard.

Portland soils have grayish-brown silty clay or clay surfaces over brown and reddish-brown clay material that is mottled gray. They are suited for intensive crop use when protected from overflow and adequately drained. They have a moderately high potential for the production of southern hardwoods, but have severe equipment limitations. They have a high potential for fish and wildlife developments. They have severe limitations for nonfarm uses because of poor drainage, slow percolation rate, high shrink-swell and overflow hazard.

**5 WRIGHTSVILLE-ACADIA ASSOCIATION:** Deep, somewhat poorly drained, slowly permeable, clayey soils on bottomland and terraces. Wrightsville 40%, Acadia 35% (inclusions of Morse, Gore, Cahaba and Smithton 25%).

The Wrightsville soils have gray silt loam surfaces and gray clay subsoils, mottled with yellow and red. They are suited for intensive crop production if adequate drainage is provided. They have a moderate potential for the production of southern pine and hardwood, but have severe equipment limitations. They are well suited for fish and wildlife developments. They have severe limitations for nonfarm uses because of slow permeability, high shrink-swell and seasonal high water table.

The Acadia soils have brown and gray mottled silt loam surfaces and gray, yellow and red clay subsoils. Their potential use, suitability and limitations are the same as for Wrightsville soils.

**6 OZAN-TOINE ASSOCIATION:** Deep, well drained and poorly drained, moderately and slowly permeable, loamy soils on bottomlands. Ozan 45%, Toine 35% (inclusions of Adaton and Aycok 20%).

Ozan soils have gray fine sandy loam surfaces and gray loam subsoils mottled yellowish-brown. They are suited to adopted crop and pasture production if adequate drainage is provided. They have a moderately high potential for the production of southern pine and hardwood, but have severe equipment limitations because of wetness. They are well suited for fish and wildlife developments. They have severe limitations for nonfarm uses because of slow permeability, temporary high water table and overflow hazard.

The Toine soils have brown loam surfaces and dark yellowish-brown sandy clay loam subsoils. They are suited for intensive crop use where protected from overflow. They have a high potential for the production of southern pine and hardwood. They are moderately well suited for fish and wildlife developments because of moderate water holding capacity of impoundments. They have moderate to severe limitations for nonfarm uses because of overflow hazard.

**7 OUACHITA-AMY ASSOCIATION:** Deep, somewhat poorly drained, moderately and slowly permeable, loamy soils on bottomlands. Ouachita 40%, Amy 38% (inclusions of Leaf, Chenneby, Myatt and Kalmia, 22%).

Ouachita soils have dark grayish-brown to brown silt loam surfaces and dark grayish-brown to yellowish-brown silt loam or silty clay loam subsoils. They are suited for intensive crop use where protected from overflow. They have a moderately high potential for the production of southern pine and hardwoods. They are well suited for fish and wildlife developments. They have moderate to severe limitations for nonfarm uses because of overflow hazard.

Amy soils have gray to grayish-brown silt loam surfaces and gray silty clay loam subsoils mottled with shades of yellow and brown. They are suited to adopted crop and pasture production if adequate drainage is provided. They have a moderately high potential for the production of southern pine and hardwood, but have severe equipment limitations. They are well suited for fish and wildlife developments. They have severe limitations for nonfarm uses because of slow permeability, temporary high water table and overflow hazard.

**8 ALAGA-KIRVIN ASSOCIATION:** Deep, excessively drained and well drained, rapid and slowly permeable, sandy and clayey soils on uplands. Alaga 43%, Kirvin 37% (inclusions of Cahaba, Lucy, Troup, Sacul and Norfolk, 20%).

Alaga soils have dark grayish-brown to dark yellowish-brown loamy sand surfaces over pale brown to strong brown loamy sand. They are suited for vegetable crops. Using adapted plants they are suited for pasture and production. Erosion is a severe hazard. They are suited for yellow pine production. They have slight to severe limitations for fish and wildlife developments because of the rapid permeability they are unsuited for water impoundments. They have slight to moderate limitations for nonfarm use because of erosive sands.

Kirvin soils have brown fine sandy loam surfaces and yellowish-red clayey subsoils. They are suited for pasture and hayland production. They have a moderate potential for the production of southern pine. They have slight to moderate limitations for fish and wildlife developments. They have moderate limitations for nonfarm uses because of slow permeability, slopes and moderate shrink-swell.

**9 TIAK-MAYHEW ASSOCIATION:** Deep, somewhat poorly to poorly drained, very slowly permeable, clayey soils on uplands. Tiak 50%, Mayhew 35% (inclusions of Sacul, Sawyer and Adaton, 15%).

Tiak soils have grayish-brown to dark grayish-brown silt loam surfaces and gray clay subsoils mottled red and yellowish-brown. They are suited for pasture production. They have a moderate potential for the production of southern pine. They have slight to moderate limitations for fish and wildlife developments. They have severe limitations for nonfarm uses because of high shrink-swell, low bearing value and slow permeability.

The Mayhew soils have grayish-brown silt loam surfaces and gray clay subsoils. They are suited for pasture production with adopted plants. They have a low potential for the production of southern pine and have severe equipment limitations due to wetness and high clay content. They are well suited for fish and wildlife developments. They have severe limitations for nonfarm uses because of temporary high water table, slow permeability and high shrink-swell.

**10 AMY-SMITHTON ASSOCIATION:** Deep, poorly drained, slowly permeable, loamy soils on broad flats. Amy 60%, Smithton 30%, (inclusion of Cahaba and Norfolk, 10%).

Amy soils have gray to grayish-brown silt loam surfaces and gray silty clay loam subsoils mottled with shades of yellow and brown. They are suited to adapted crops and pasture production if adequate drainage is provided. They have a moderately high potential for the production of southern pine and hardwood, but have severe equipment limitations. They are well suited for fish and wildlife developments. They have severe limitations for nonfarm uses because of slow permeability, temporary high water table and overflow hazard.

Smithton soils have very dark grayish-brown to light brownish-gray fine sandy loam surfaces and light brownish-gray or gray fine sandy loam or loam subsoils mottled with shades of yellow and brown. They are suited to adopted crops and pasture production if adequate drainage is provided. They have a moderately high potential for the production of southern pine and hardwood, but have severe equipment limitations. They are well suited for fish and wildlife developments. They have severe limitations for nonfarm uses because of slow permeability, temporary high water table and overflow hazard.

**11 KIRVIN-CAHABA ASSOCIATION:** Deep, well drained, moderately slow and moderately permeable, loamy and clayey soils on uplands. Kirvin 45%, Cahaba 40% (inclusions of Luverne, Kalmia, Sacul and Caddo, 15%).

Kirvin soils have brown fine sandy loam surfaces and yellowish-red or red clayey subsoils. They are suited for pasture and hayland production. They have a moderate potential for the production of southern pine. They have slight to moderate limitations for fish and wildlife developments. They have moderate limitations for nonfarm uses because of slow permeability, slopes and moderate shrink-swell.

Cahaba soils have brown fine sandy loam surfaces and yellowish-red or red sandy clay loam subsoils. They are well suited for crop and pasture production. They have a moderately high potential for the production of southern pine and have no serious management problems. They have slight to moderate limitations for fish and wildlife developments, except for those developments requiring shallow water. Cahaba soils are well suited for nonfarm uses.

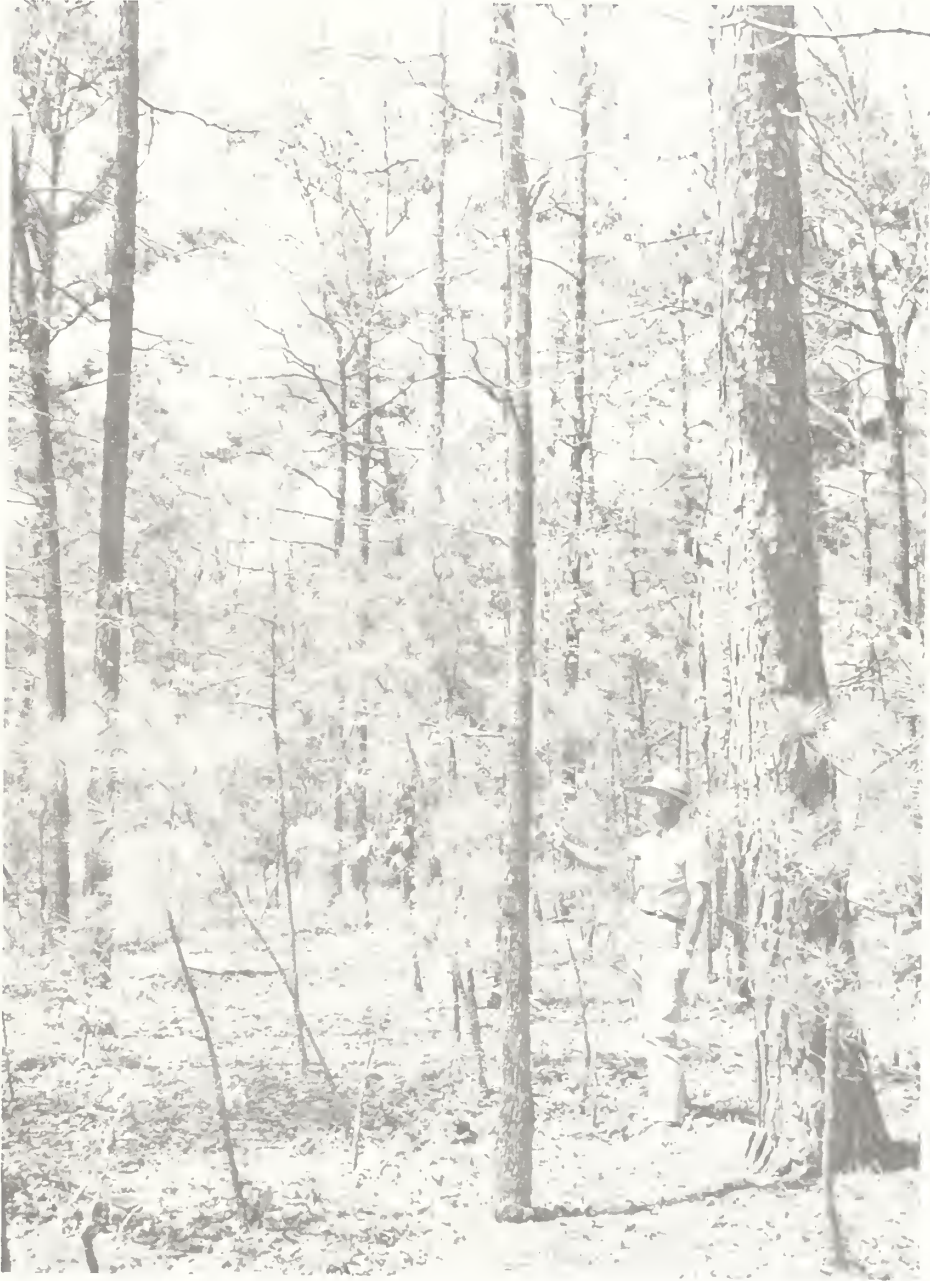
**12 SAFFELL-SACUL ASSOCIATION:** Deep, moderately well drained, moderately and slowly permeable, loamy and clayey soils on uplands. Saffell 50%, Sacul 35% (inclusions of Aycok, Ruston, Cahaba, Tiak and Luverne 15%).

Saffell soils have brown, gravelly loam surfaces and yellowish-brown or yellowish-red gravelly sandy clay loam subsoils. They are well suited for peach orchards and pasture production. They have a moderate to low potential for the production of southern pine. They have slight to moderate limitations for fish and wildlife developments. They have moderate limitations for nonfarm uses because of high gravel content and moderate slopes. Saffell soils are an excellent source of gravel for commercial use.

Sacul soils have dark grayish-brown or brown silt loam surfaces and yellowish-red clayey subsoils mottled with gray. They are suited for pasture and hayland production. They have a moderate potential for the production of southern pine. They have slight to moderate limitations for fish and wildlife developments. They have moderate limitations for nonfarm uses because of slow permeability, slopes and moderate shrink-swell.



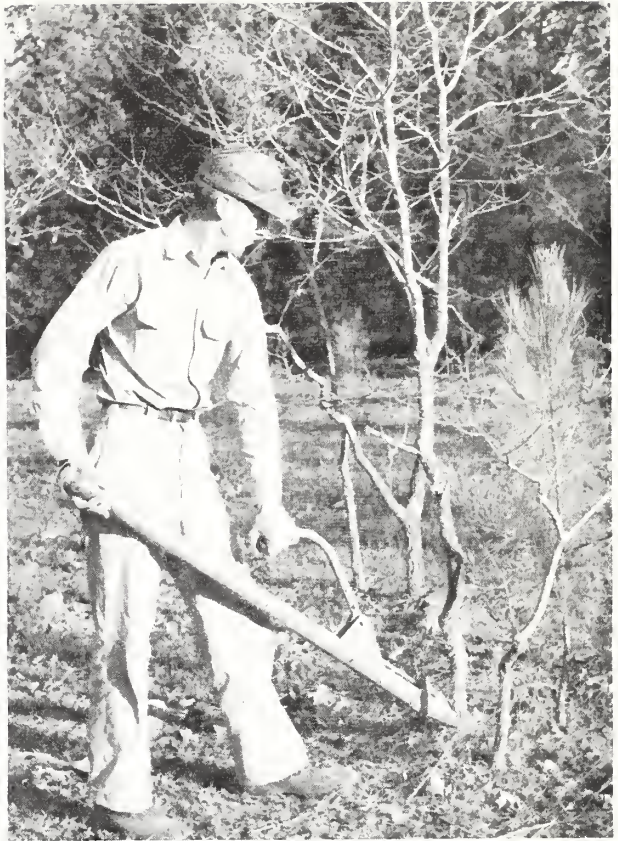
# Forest Land



# Forest Land Management



**Planting**



**Weeding**



**Thinning**



**Harvesting**



# NATURAL RESOURCES

## Forest Land

There are 3,790,000 acres of commercial forest land within the Southwest Arkansas RC&D Project. This is about 73% of the total land area within the project.

Commercial forest land by ownership class  
and county (Thousand Acres):

<u>County</u>	<u>All</u> <u>Ownerships</u>	<u>National</u> <u>Forests</u>	<u>Other</u> <u>Public</u>	<u>Forest</u> <u>Industry</u>	<u>Farmer</u>	Miscel- laneous <u>Private</u>
Calhoun	348.0			232.2	5.8	110.0
Columbia	379.5		.2	82.9	89.7	206.7
Dallas	372.6		Negligible	237.9	70.3	64.4
Hempstead	286.7		7.2	79.4	97.7	102.4
Howard	254.8	1.2	9.0	165.6	63.8	15.2
Lafayette	212.8		Negligible	61.7	56.1	95.0
Little River	192.5		4.7	71.6	49.6	66.6
Miller	217.0		8.9	21.0	77.1	110.0
Nevada	300.0		7.2	90.1	90.1	112.6
Ouachita	384.3		9.9	103.8	85.5	185.1
Sevier	269.5		9.3	137.3	68.7	54.2
Union	<u>572.4</u>	<u>      </u>	<u>.9</u>	<u>194.6</u>	<u>54.0</u>	<u>322.9</u>
ALL COUNTIES	3,790.1	1.2	57.3	1,478.1	808.4	1,445.1
			1.5%	39%	21.3%	38.2%

Source: U. S. Forest Service

About 39% of the commercial forest land is industry owned. Farmers own 21%, and 38% belongs to other private landowners. Only less than 2% is in public ownership; of this amount 1,200 acres is National Forest land.

Commercial Forest Land by Forest Type and County  
(Thousand Acres)

<u>County</u>	<u>All Types</u>	<u>Loblolly Shortleaf Pine</u>	<u>Oak Pine</u>	<u>Oak Hickory</u>	<u>Oak-Gum Cypress</u>	<u>Elm-Ash Ash Cottonwood</u>
Calhoun	348.0	133.4	69.6	63.8	81.2	---
Columbia	379.5	144.9	96.6	55.2	82.8	---
Dallas	372.6	118.8	102.6	70.2	81.0	---
Hempstead	286.7	109.8	79.3	42.7	54.9	---
Howard	254.8	93.1	88.2	49.0	19.6	4.9
Lafayette	212.8	78.4	56.0	22.4	44.8	11.2
Little River	192.5	38.5	77.0	33.0	38.5	5.5
Miller	217.0	56.0	56.0	21.0	63.0	21.0
Nevada	300.0	102.0	54.0	90.0	54.0	---
Ouachita	384.3	85.4	109.8	85.4	103.7	---
Sevier	269.5	78.4	39.2	78.4	58.8	14.7
Union	<u>572.4</u>	<u>199.8</u>	<u>118.8</u>	<u>118.8</u>	<u>135.0</u>	<u>---</u>
ALL COUNTIES	3,790.1	1,238.5	947.1	729.9	817.3	57.3

Source: U. S. Forest Service

# Grassland





## Pasture and Hay for Beef and Dairy Production





## Cropland

The 237,592 acres of cropland is devoted to the production of cultivated crops, primarily soybeans, cotton, small grains, and grain sorghums. Generally, the cropland is adjacent to major streams and rivers; however, it is being increased in the hill areas. A relatively small amount is currently being irrigated.

## Grassland

The 870,515 acres of grassland in the project area can be separated approximately as follows:

a. Tame pastures -----	510,423 acres
b. Native pastures -----	141,422 acres
c. Rangeland -----	210,516 acres
d. Native hayland (meadow) -----	8,154 acres

The tame pastures are devoted primarily to bermudagrass (common and coastal), bahiagrass, tall fescue with white clovers and lespedezas overseeded in many instances. Native pastures are made up primarily of several native paspalums, carpetgrass, beaked panicum, purpletop, sedges and broomsedge. Little blue-stem, Indiangrass, silverboard bluestem, three-awns, tall drop-seed and miscellaneous native forbs and shrubs are the major plants found on rangeland areas.

## Fish Farming

Fish farming is expanding in the area. At least seven of the project counties have operating fish farms that are used to grow bait minnows and catfish. There are now 170 acres of land devoted to the intensive culture of bait minnows and 277 acres in catfish. There are approximately 11,535 farm ponds in the area. These ponds are stocked normally with bass, bluegill and catfish but many pond owners are now stocking with catfish and feeding the fish for home use and limited commercial sales.

## Water

There are 11,820 farm ponds, lakes and reservoirs in the project area covering 57,365 surface acres and impounding 411,200 acre feet of water. Of these impoundments, 372 contain five or more surface acres of permanent water--varying from a five-acre farm pond to the 29,500 Millwood Reservoir. In addition, there are hundreds of miles of permanently flowing rivers and streams dissecting the area covering approximately 45,115 acres and carrying large volumes of unused water outside the area as surface runoff.

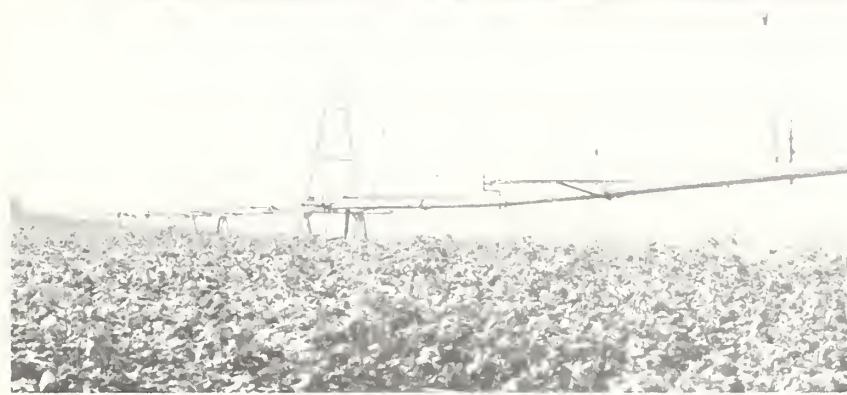
# Water Resources



# Better Water Management for



Flood  
Prevention



Agriculture



Homes



and  
Industry



The northwestern part of the area is in the Interior Highland geologic area. Ground water wells in these formations generally yield small quantities of good quality water, but, sufficient for domestic use. The source is sandstone and shale rock. The part of the area included in the ground water resource area is in the north 20 percent of Sevier County, and the north 40 percent of Howard County. To the south of this generally trending east-west band is an outcropping Trinity group formation where water wells yield fair quality and quantity at depths of a few feet to about 450 feet. Farther south, wells in the Takio formation yield water at depths from about 100 feet near the outcrop to about 400 feet near the southern tip of Sevier County. Many of the Takio wells are free-flowing, especially in the lower elevations in the Cossatot River bottoms.

Ground water quantity and quality in the remainder of the area will vary widely because of six or seven waterbearing formations at various depths. Generally, wells yielding 50 to 500 g.p.m. can be developed. Water quality varies from good to highly mineralized. Many of the deep wells are high in flouride (salt), and in many shallow wells, the water is hard.

#### Fish and Wildlife

The fish and wildlife resources provide a foundation for future development of the area. There are 280 irrigation reservoirs, one floodwater retarding structure built (others planned), nine large publicly owned lakes and 372 privately owned lakes (in excess of five surface acres). Numerous springs and artesian wells provide year round recharge to the hundreds of creeks and rivers in the area.

Many of the water developments and natural systems are important not only to fish resources but to wildlife. Waterfowl commonly concentrate in Hempstead, Howard, Miller, Sevier and Lafayette Counties. Beaver, muskrat, mink and raccoons are common around water developments. Land use changes from farm to woodland have resulted in a decrease of farm game, such as bobwhite and rabbit and an increase in woodland game, such as deer, turkey and squirrel. There are several duck clubs and numerous deer clubs in the area. Each of these bring visitors into the area each year.

The Arkansas Game and Fish Commission provides invaluable service to the sportsmen of the area through Game and Fish Management areas. Fishing areas include, Bois d'Arc Reservoir (705 acres) in Hempstead County; Lake June (106 acres) in Lafayette County; White Oak Lake (2,676 acres) in Nevada and Ouachita Counties; Tri-County Lake (280 acres) in Calhoun County; and Calion Lake (500 acres in Union County), which were developed by the Commission. Additionally there are other large reservoirs and streams, such as Lake Erling and Millwood Reservoir, which the Commission manages.

Areas developed by the Commission for public hunting include the Sulphur River Area (15,955 acres) in Miller County; Bois d'Arc Creek Area (5,523 acres) in Hempstead County; the Hope Quail Area (2,116 acres) Hempstead County; and White Oak Lake Public Hunting Area (2,694 acres) in Ouachita County.

### Minerals

The total mineral output for the area in 1968 was valued at about 110.4 million dollars. The value of petroleum was about \$52.7 million, natural gas \$6.6 million, natural gas liquids \$5.1 million, sand and gravel \$4.6 million, bromine \$20.8 million, clays \$264,000 and slate about \$50,000. Stone, cement and gypsum had a combined total of about \$20.4 million.

Numerous oil and gasfields are scattered through Columbia, Union, Southern Calhoun, Eastern Lafayette, Southeastern Miller, Southern Ouachita, and Southern Nevada Counties. Large bromine production is obtained from abundant subsurface brines in Union and Southern Columbia Counties. Cement is prepared at plants adjacent to chalk deposits in Howard and Little River Counties. Clay is produced in Hempstead, Howard, Little River, Miller, Ouachita and Union Counties. Sand and gravel is produced in all counties from relatively abundant deposits.

Mineral Substances in the Southwest Arkansas  
RC&D Region

	Calhoun	Columbia	Dallas	Hempstead	Howard	Lafayette	Little River	Miller	Nevada	Ouachita	Sevier	Union
Petroleum	p	p		p		p		p	p	p		p
Natural gas		p				p		p	x	p		p
Natural gas liquids		p				p						
Cement					p		p					
Stone				x	p		p			x	x	
Clay	x	x	x	p	p	x	p	p	x	p	x	p
Iron						x			x			
Gypsum					p							
Salt										x		
Bromine		p										p
Sand and gravel	p	p	p	p	p	p	p	p	p	p	p	p
Slate					p							
Lignite	x		x		x	x			x	x		
Titanium				x	x							
Greensand				x								
Barite					x						x	
Lead and zinc					x						x	
Mercury					x							
Strontium					x							
Antimony											x	
Asphalt											x	

p - produced in 1968

x - resources known

Source: U. S. Department of Interior  
Bureau of Mines

# Recreation, Wildlife and Tourism





# Opportunities for Outdoor Recreation and Improved Wildlife Habitat Abound in Southwest Arkansas



## RECREATION AND TOURISM

Many acres of land will have multiple uses, such as forest land where both timber and wildlife will be harvested or lakes providing flood storage and recreation. There are now 63,123 acres in the project area devoted primarily to recreation use as follows: Municipal Parks 364 acres; public hunting grounds 28,891 acres; and lakes and reservoirs 33,868 acres.

The U. S. Fish and Wildlife Service plans to acquire 65,000 acres near Felsenthal in Union County for fish and wildlife use. This and other developments being considered will make about 100,000 acres devoted primarily to recreation.

## ECONOMIC DATA

Mineral resources account for the greatest part of the area's income with a total output in 1968 of about 110 million dollars. Agriculture was next with a total income of about 50 million dollars from all products sold. Crops accounted for 10 million and livestock 40 million. Poultry accounted for a big percent of the livestock products. Forestry products sold in 1968 brought slightly over 25 million dollars.

## TRANSPORTATION

The area is linked together by various highways--Interstate 30 along the western portion, state highways numbered U.S. 167, 67, 79 and 71, which are north-south routes, along with state highway number U.S. 82 and state highways 4 and 24 connecting east-west traffic.

Several truck routes tie the area together and railroad companies offer six main line and seven short line railroads.

The Ouachita and Red Rivers offer additional transportation potential. There is an inland port at Camden and Lion Oil Company has a port at Calion.

## INCOME AND EDUCATION

The median family income in 1959 was \$3,030. This was below the state median of \$3,184 and represents 53.5 percent of the national median of \$5,660.

The median school year completed by the area's population 25 years of age and over in 1960 was 8.9, compared to a national median of 10.6.

## MAJOR SOURCES OF INCOME

The economy of the area has slowly progressed from an agricultural based economy to one in which manufacturing has become of primary importance. While agriculture still plays an important role in the economy, mineral extraction, especially oil and gas, and timber production are significant primary types of production.

The following table shows the employment by major industry for 1960 and 1965.

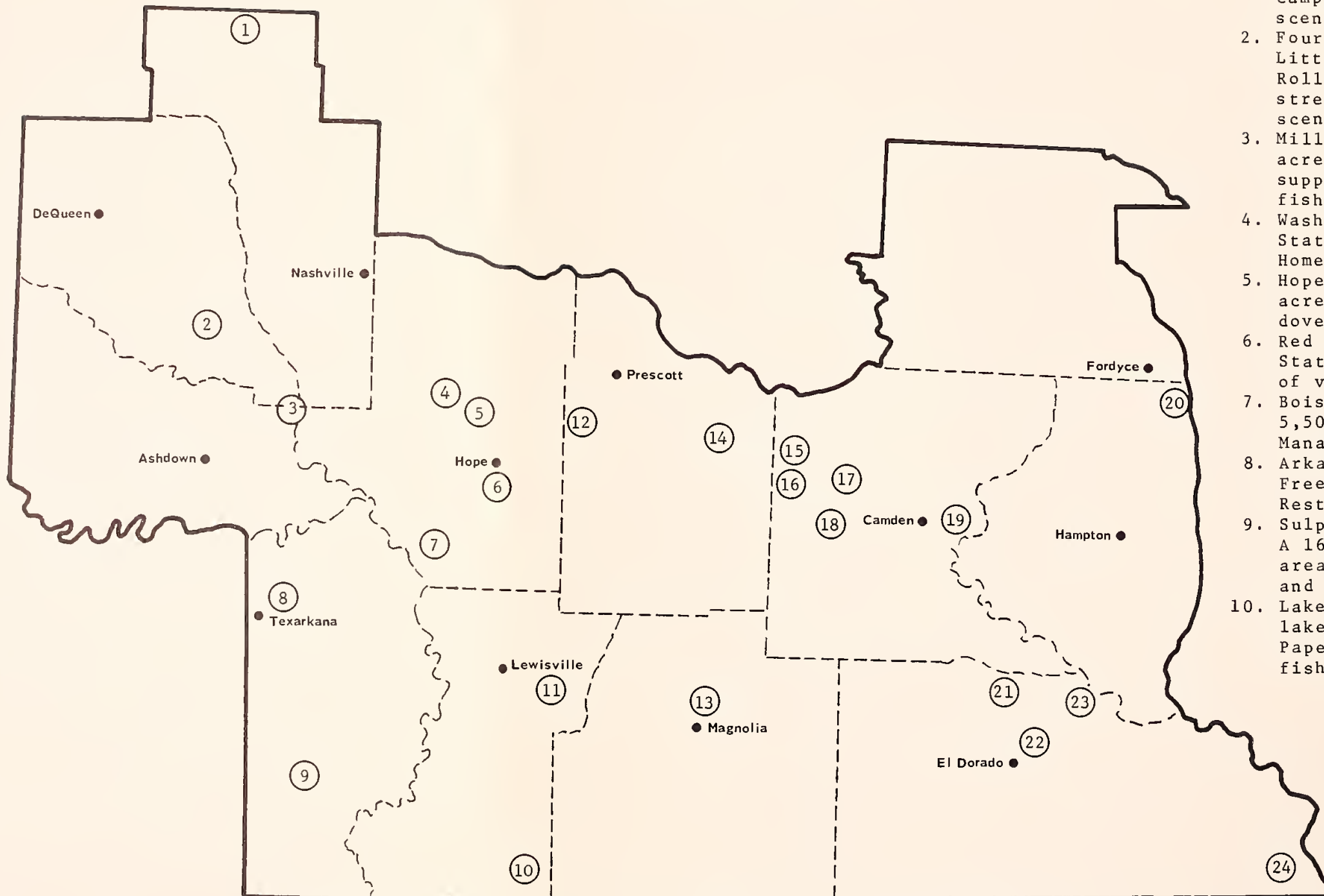
### Area Employment by Major Industry

Industry	1960	1965
Total Employment	42,550	47,925
Manufacturing	14,600	17,650
Mining	2,250	2,000
Contract Construction	1,475	2,225
Transportation, Public Utilities and Communications	2,575	2,625
Wholesale and Retail Trade	6,750	7,600
Finance, Insurance & Real Estate	700	800
Services	3,450	4,025
Government	6,175	7,250
Agriculture, Forestry, and Fish	4,575	3,750

Source: Southwest Arkansas Planning and Development District



## Points of Interest



1. Shady Lake - In adjoining county! Swimming, fishing, camping, and mountain scenery.
2. Four Rivers - Cossatot, Little River, Saline and Rolling Fork. Clear flowing streams, camping and mountain scenery.
3. Millwood Lake - Covers 29,500 acres, flood control, water supply, recreation, and fishing.
4. Washington Ark. - Confederate State Capitol 1863-1865. Home of the Bowie Knife.
5. Hope Quail Area - Covers 2,000 acres. Public hunting, quail, dove, squirrel, turkey, deer.
6. Red River Voc. Tech. School - State operated. Offers variety of vocational courses.
7. Bois d'Arc Hunting Area - a 5,500 acre public hunting area. Managed primarily for ducks.
8. Arkansas Tourist Information - Free maps and information. Rest stop, picnic areas.
9. Sulphur River Wildlife Area - A 16,000 acre public hunting area. Managed for duck, deer and squirrel.
10. Lake Erling - a 49,000 acre lake owned by International Paper Co. Open to public fishing.
11. Lake June - A 106 acre lake. Fishing and picnicking.
12. Ark. La. Village - Replica of western town. Souvenirs, picnicking and bowling.
13. Southern State College - State supported co-educational school. Established 1909.
14. Reader Railroad - Steam operated. Passenger and freight service. 47 miles round trip.
15. White Oak Creek Public Hunting - A 2,694 acre public hunting area. Squirrel, deer, turkey, and duck.
16. White Oak Lake - A 2,600 acre lake. Fishing, camping and picnicking.
17. Bragg Lake - A 200 acre lake. Fishing, camping, and picnicking.
18. Poison Springs State Park - Historical marker. Civil War battlefield site.
19. Camden Technical Institute - Offers electronics and other technical training.
20. Tri-County Lake - A 280 acre public lake. Fishing, camping, and picnicking.
21. Smackover Oil Fields - Hundreds of oil fields near Smackover where oil was first discovered in Arkansas.
22. Oil Belt Voc. Tech. School - State operated. Offers variety of vocational courses.
23. Calion Lake - A 500 acre public lake. Fishing, camping and picnicking.
24. Felsenthal Wildlife Area - A 65,000 acre public hunting, fishing and recreation area.



## Section III

# **PROJECT PROBLEMS AND NEEDS**





## PROJECT PROBLEMS AND NEEDS

### SOCIAL CONDITIONS

#### Population Change

There was a 1.2 percent decrease in the population of the project area during the last 10 years. This out-migration is due to job shortages, low incomes, substandard housing, inadequate schools, poor roads and inadequate medical facilities. Four counties in the area--Little River, Sevier, Howard and Miller--did show an increase in growth. This growth was due in part to the Rural Renewal Program in Little River and Sevier Counties and the location of new industry.

A study of migration and age distribution indicated that migration occurs primarily among the work-force sector of the population (ages 15-65) leaving a disproportionately larger percentage of elderly persons in the more rural areas. Since many older persons are still able and willing to work, more of the "green thumb" projects could provide productive employment.

Counties	Population		Increase in Population 1960 to 1970	
	1970	1960	Number	Percent
Area Total	224,571	227,394	-2,823	-1.2
Calhoun	5,573	5,991	-418	-7.0
Columbia	25,952	26,400	-448	-1.7
Dallas	10,022	10,522	-500	-4.8
Hempstead	19,308	19,661	-353	-1.8
Howard	11,412	10,878	534	4.9
Lafayette	10,018	11,030	-1,012	-9.2
Little River	11,194	9,211	1,983	21.5
Miller	33,385	31,686	1,699	5.4
Nevada	10,111	10,700	-589	-5.5
Ouachita	30,896	31,641	-745	-2.4
Sevier	11,272	10,156	1,116	11.0
Union	45,428	49,518	-4,090	-8.3

Source: U. S. Census of Population

## Housing

Although comprehensive housing statistics for the area are somewhat dated (1960 census), they do serve to indicate the area's comparative situation. Of the 76,835 housing units in the area in 1960, only 41 percent were connected to public sewers and 52 percent had hot and cold running water.

The poor quality of housing in the area is reflected in the number of units in sound condition. The area average of 51 percent is far below the state average of 62 percent and the national average of 81 percent.

Housing among the minority groups within the project area is generally substandard, particularly in the rural areas. The conditions in these houses normally consists of substandard structures, lack of plumbing facilities, and overcrowding.

## Education and Training

The low income levels of the area reflect a need for vocational training for a large amount of the labor force. While the area is making significant gains in vocational training facilities, the need for additional facilities still exists. The three vocational technical schools located in Hope, El Dorado, and Camden have a total enrollment of 570 students.

The financial resources available to the public school districts are inadequate to provide sufficient funds for the operation of schools even with the additional revenues received from state and federal sources. The smaller school districts need to consolidate their schools, especially their high school grades, for more efficient operation and to provide a broader curriculum for the students.

## Health

There are 17 hospitals in the area with a total of 1,116 beds to accommodate an estimated population of 236,000 persons. While these hospitals are well distributed throughout the area, many have limited facilities and most are greatly understaffed.

The greatest health need in the area is more medical doctors and other health personnel. In 1964, there were 202 doctors in the area which represents 103 doctors per 100 thousand population. While this is above the state average, it is well below the national average of 151. A similar pattern prevails in the distribution of dentists and nurses.

In many communities, there is a need for education on the prevention and immunization of diseases. The lack of transportation to health clinics is often a problem.

Although the use of illegal drugs is not known to be as prevalent as in other areas, there is some abuse, and education is needed in this field.

Ambulance service continues to be a problem and some system needs to be developed on a county-wide or area basis.

#### COMMUNITY FACILITIES

There is a need for enlarged and improved water and sewer facilities in most of the towns in the area. The movement of the people from the rural areas to the cities has strained the existing facilities. Additional water storage, treatment, and distribution facilities will be required for future growth. An inadequate supply of water is one of the main reasons many of the towns have been unable to attract new industry.

Most of the present water is supplied from deep wells. Many of these wells are failing and it will be necessary to turn to surface reservoirs for dependable supplies.

The dumping of garbage, trash, rubbish, litter, old automobiles, and various other solid wastes along country roads is a common practice in all of the counties. This practice of indiscriminate dumping is caused by the lack of pride and the lack of available planned dump grounds. These unsightly and unsanitary conditions are not conducive to attracting tourists, industries, or new residents.

A few of the towns and cities have provided a modified sanitary landfill system, but most still use the open pit-burn method. The sanitary landfill is expensive when compared to the open pit dump due to the equipment required. Because of the cost involved, plans for solid waste disposal should be made on a county-wide or larger area.

Some of the soils in the area are unsuited for septic tank filter fields and other related uses. Frequently houses are built and sewage systems installed on undesirable soils.

The Soil Conservation Service has information available showing the limitations of soils for buildings, sewage systems, highways, field crops, and other uses. Many costly mistakes can be avoided if soil information is utilized properly in planning land use changes. Wetness and flooding are problems in some towns and communities. A serious health hazard exists in many communities where flooding occurs on areas occupied by outdoor toilets.

## NATURAL RESOURCES

### Forest Land

Forest wild fires are a major problem in the project area and are responsible for considerable damage to timber, wildlife habitat, hydrologic conditions and aesthetic values. Hardwood timber is especially vulnerable to fire and the resulting reduction in value of hardwood stands reduces the resource base of the area. During the period of 1965 through 1969, an area of approximately 65,982 acres of commercial forest land was burned over in the twelve counties.

#### Fire Occurrence and Area Burned 1965-1969

<u>County</u>	<u>No. Fires</u>	<u>Total Forested Acres Burned</u>
Calhoun	524	5,237
Columbia	413	6,036
Dallas	431	4,627
Hempstead	374	5,298
Howard	245	7,572
Lafayette	331	5,107
Little River	259	2,163
Miller	397	7,310
Nevada	286	5,184
Ouachita	403	6,413
Sevier	264	3,432
Union	851	7,603
Totals	4,778	65,982
Average/Annual	955	13,196

Source: U. S. Forest Service and Arkansas Forestry Commission

There is a wide variation among the counties in both number of fires and total forested acres burned during the 1964-1969 period. The range is from 245 fires in Howard County to 851 fires and 7,603 acres burned in Union County during the five-year period. Although South Arkansas is confronted with periods of relatively high fire danger, the Arkansas State Forestry Commission, the wood using industries and volunteers are reasonably successful in suppressing fires in this area. The average fire in this area is suppressed before it becomes 15 acres. During the period, over 65,000 or 1.7% of the woodlands of commercial forest land burned. The percent burn rate is excessively high and it is obvious there is considerable damage to timber, wildlife habitat, hydrologic condition, recreational, and aesthetic value.



The water resource of the area is to a large degree dependent on establishing and maintaining the hydrological condition found under well-managed forests. The degrees of management practiced on the forest land will favorably or adversely affect the supply of clear, unpolluted water. When conditions are favorable, this water is released gradually to the streams and lakes for use in agriculture, recreation and industry.

Movement of sediment into the area's streams, rivers, and lakes can be further reduced by improved logging practices, leaving clumps of timber along streams and better designed unpaved roads. Since water pollution is becoming of greater concern each year, there is a need to accelerate corrective measures. Some individuals and wood using industries are taking corrective measures.

An estimated 700,000 acres need planting and the majority of this will also need site preparation or release. An additional 800,000 acres of pine and hardwood seedlings, saplings and pole timber need released from competitive cull and low value trees. More REAP type cost-sharing funds will be needed to accomplish this and other related woodland needs.

Markets are needed for wood products, primarily pulpwood, and posts where, in most counties, there has been a surplus. In spite of the pulpwood industry using 42 percent more pulpwood in 1968 than they used in 1958, there has been a 16 percent increase in pine growing stock during this same period. Prices for wood products are generally lower in Arkansas than in other states in the south. Forest marketing aggregates offer a possibility for increasing woodland income for the private non-industry owners.

### Cropland

Of the 237,592 acres of land in the project devoted to cultivated crops, 63,972 acres have a water management problem and 50,064 acres have an erosion problem. Conservation cropping systems and crop residue practices are needed on all of the cropland areas.

Water management practices needed on the wetlands include main and lateral ditches, field drains, water control structures and land leveling. About 60 percent of this type of land has been adequately treated.

Most of the land with an erosion problem has been terraced. However, contour cultivation is practiced on only a small percent because it is difficult to plant and cultivate with multi-row equipment. New techniques in conservation treatment, such as "No-Till" production of row crops, will need to be developed to adequately control erosion on the more sloping cropland. Some of the steeper land will need to be planted to grass or trees.

Some of the grassland areas are being converted to cropland use, primarily soybeans. Proper attention is not always given to the kind of soil, the slope of the land, or to the essential conservation measures needed when placed to this use.

### Grassland

A. Improved Pastures - There are 510,423 acres of improved pasture in the project. Of this acreage, approximately 75,000 acres need to be renovated or re-established to more desirable plants. Establishment of permanent pasture on cropland areas now used for supplemental or intermittent grazing can also increase the production of forage and result in increased livestock production.

The carrying capacity of 90 percent of the permanent pastures can be improved with proper management. This includes proper grazing use, brush and weed control, fertilization, liming and rotation grazing.

Hay is used extensively in this area to provide forage for livestock during the winter months. Cost of production can be lowered by establishing grazing systems that provide for year-long grazing. Tall fescue, with adequate fertilization and management, can be grown on many farms to provide winter grazing. Winter grazing can be provided from frosted summer grasses such as bermudagrass and weeping lovegrass. Rangelands and grazable woodlands can also provide high energy winter feed when properly supplemented with protein.

B. Range, Native Pasture and Grazable Woodland - Low grass yields on 90 percent of the blackland prairies and native pastures is due to low vigor of the key grasses and the presence of low-production invader species, including weeds and brush.

Grass production on 195,128 acres of savannahs and non-commercial woodlands is low, due to the "dense" canopy developed from low grade hardwoods increasing in the stand.

Approximately 195,000 acres of land now in savannahs or low grade hardwood woodlands will need brush control, using selective herbicides, fencing, water facilities and deferred grazing to get maximum forage production.

Adequate, well distributed stockwater is needed on approximately 100,000 acres of these wooded rangeland.

The existence of insects and parasites, and the lack of control equipment and well spaced water developments are also a problem.

Present hay production (approximately 1.25 tons per acre) on the native meadows is below potential.

Approximately 65% of the grazable forestland filled in with hardwood underbrush can be improved for grazing by good timber management and application of timber stand improvement.

### Fish Farming

With few exceptions, existing ponds and reservoirs were not constructed with fish management in mind. Shallow shorelines and the absence of drawdown facilities limit their fishery use. Proper stocking and fertilization, improved control of aquatic weeds and trash fish, and the restriction or improved elimination of livestock use can all contribute to increased fish production. However, many of the ponds are too small -- one-half acre or less in surface area -- for satisfactory production of sport or food fish.

### Water

Crude oil and salt water waste have created serious erosion damage and water pollution problems in parts of six counties within the project area. Recreation, wildlife and fisheries have suffered damages, as well as the water being rendered unsuitable for municipal or industrial uses.

Frequent damaging floods occur on all of the major streams and small tributaries. Because of this, many landowners have been forced to shift from cultivated crops to livestock and woodland enterprises resulting in lower income. Even this shift is not without its problems, for instance on many occasions large numbers of livestock have drowned following heavy rains.

Floodwaters on the small watersheds in the northern counties often wash out state and county roads, bridges, and other improvements in the floodplain. Residential and business property in the communities, towns and cities is also often damaged.

In addition to the cost of replacing the damaged and washed out structures, there is significant indirect damages such as interruption of transportation, loss of business, and expense of rerouting of mail and school buses.

In the late 1800's and the early 1900's, much of the area was thickly settled and the open fields planted to clean cultivated crops such as cotton and corn. This resulted in severe erosion of the uplands and sediment damage to the bottomlands. Flooding of large floodplain areas has also caused major problems and drainage has been impaired because of sediment filled outlets.

There is a need for project action in 13 feasible watersheds in the area. These watersheds range in size from the largest to the smallest in the state. Local organizations have applied for PL-566 assistance on eight of these 13 small watersheds.

Flood plain areas should be zoned or otherwise restricted to uses that are more compatible with flooding. For example: residential and business developments should be prohibited unless some steps are taken to control flooding. Open space, forestland, wildlife, etc. are much more compatible.

The quantity and quality of underground water is quite variable from one portion of the project area to another. Surface storage will be necessary for municipal, industrial and irrigation uses in many instances and suitable storage sites are not always available.

A small percentage of the total cropland in the area is irrigated. Much of the land in Hempstead, Lafayette, Little River and Miller Counties is suitable for growing irrigated crops; however, the lack of a sufficient supply of water has kept this land from being developed for irrigation.

Improved drainage is needed on about 25 percent of the cropland. The cost of installing drainage and irrigation practices is a major problem to most landowners. Additional financial and technical assistance is needed in developing irrigation and drainage systems.

#### Fish and Wildlife

Crude oil and salt water not trapped or returned to underground reservoirs has created serious soil erosion and pollution problems, in varying amounts, within six of the counties in the project area. This has contributed to the pollution of rivers and streams that once were naturally beautiful and produced excellent fisheries. Present laws prohibit this from happening, but until these materials are leached from the soil below old spills and the area established to an effective vegetative cover, the problem will persist.

Many streams have flow periods, which critically affects the fisheries potential. Where possible, the flow in these streams should be augmented to improve this situation. Upstream reservoirs having these features offer the greatest possibility for improvement.

Limited effort is being made to improve the habitat for farm or forest game. Food and cover plants are generally limited to those that grow unmanaged under natural circumstances. The shift from row crops to grassland and woodland has significantly decreased the population of farm game, such as bobwhite, rabbits and doves. On the other hand, the numbers of such species as deer, turkey and squirrel have increased. There is a need for the establishment of food plots for bobwhite, rabbit, and dove, before their numbers can be significantly increased.



## Minerals

There are six oil refineries in the area. However, new field discoveries and extensions of old fields are not developing liquid reserves at a rate sufficient to replace production withdrawals. Unless this decline in remaining proven reserves is corrected, this will have a serious impact on the current industrial complex.

Wastes from the mining and processing of minerals is a common problem. Abandoned gravel, clay and gypsum pits along with hundreds of acres of timber land destroyed by oil and bromine wastes need to be treated to return this acreage to useful production.

Foul smelling sulfur compounds from paper mills and soil particles from cement plants add to the air pollution problem. Action is needed to correct these problems.

## RECREATION AND TOURISM

Outdoor recreational facilities in the project area are generally inadequate to meet the current needs of incumbent and visiting clientele, and the demand is increasing. Consequently, the existing recreational resources and facilities are being over-used. This is especially true of water-oriented facilities on weekends, holidays and vacation seasons.

There is especially a need for parks, community centers, swimming pools and playgrounds in most of the towns and cities. Loan or grant money will be necessary to develop, or expand, these facilities at the rate needed.

The forest land in the project area is supporting a good population of wildlife, such as rabbit, squirrel, quail, turkey, fox and deer. Lakes and some of the major streams are also affording excellent fishing.

Because of these conditions many people in the project area and from adjoining states and counties in Arkansas hunt and fish in the area. Since many of these have no respect for private property rights, an ever-increasing number of landowners are objecting to the intrusions to which they are subjected. Consequently, more landowners are becoming less interested in wildlife and are posting or otherwise excluding their property from use. The hunter-landowner relationship must be improved if the full benefit of this resource is to be realized. Unregulated or unrestricted developments adjacent to major water areas, such as retirement homes, and vacation cabins and cottages, are rapidly becoming a problem. Regulatory measures are needed to preserve the recreational and aesthetic values of these areas.

Some of the major tourist attractions in the area are Poison Springs Battleground in Ouachita County, Reader Railroad in Nevada County, Millwood Lake located in Hempstead, Howard and Little River Counties, and the town of Washington located in Hempstead County. Probably the most noted is Washington where Jim Black is thought to have made the first Bowie Knife. Washington was also the capitol of Arkansas during the Civil War. Many of these are undeveloped or underdeveloped, inaccessible, improperly marked (or unmarked), and lack adequate adjacent facilities such as parking areas, picnic tables, sanitary toilets, recreation areas, and food and lodging accommodations, to attract large numbers of tourists.

Littering by recreationist, tourist, and others is a major problem. Discarded paper containers, garbage, bottles and cans are everywhere. There is a need for more strategically located receptacles near heavy use areas for the placement of rubbish. Junk yards, eroding roadbanks, run-down fences, poor farm roads, and the like, are not conducive to attracting tourists, industries, or new residents. Land and water areas affected by crude oil and salt water spills are not beautiful to see, or to smell. Concentrated efforts should be made on ways and means to correct or alleviate these conditions.

## INDUSTRY

The area has gained 3,050 manufacturing jobs during the period 1960 to 1965, which represents a gain of 20 percent for the 12 counties.

A majority of the manufacturing jobs and facilities of the area are located in the five counties of Union, Ouachita, Columbia, Miller, and Hempstead. Small industrial plants made up primarily of light assembly and apparel operations plus numerous small operations processing local timber and agricultural products are located in other counties.

The manufacturing employment of Union and Columbia Counties are heavily oriented toward the petroleum industry; however, both counties have been able to obtain a wide diversity of industries. As crude oil reserves are depleted it will be necessary to divert jobs from the petroleum to other types of industry.

Timber growth is well ahead of the annual harvest. Additional markets for timber products are needed in most counties, especially for pulpwood. Greater product diversity is also needed to balance the industrial development with the raw materials available in the area. There is basically a good potential for industrial development in the area, especially when considered as a unit. Some counties, because of natural resources, existing labor force and location, have more potential than others, but practically all areas are suitable for some type of industrial operations.

Some of the problems which tend to slow industrial development are: lack of skilled workers; municipal facilities and accommodations; housing; transportation costs; financing; and other shortcomings common in underdeveloped and underindustrialized areas. Most areas need improvements in the overall living environment.

Many of the small towns can get adequate water from deep wells to supply the residents' domestic needs but will have to develop an above ground water supply to meet the needs of most industries. In many locations there are no lake sites available and in these areas it will be necessary to select industries with low water requirements.

#### OTHERS

Many small farmers have let their buildings deteriorate because of insufficient income to keep them repaired and attractive. Off farm employment is needed to bring in additional income for these and other low-income people. Long term low-interest loans are needed for repairs and installation of modern facilities in most of these homes.

There are sections in every town or city with run-down, unkept, and unattractive homes. Some are rented and some are occupied by owners. There is a need to improve these homes as well as those in the rural area. Credit on acceptable terms is also needed for this job.

The general appearance of the rural landscape is often marred by the presence of litter, junk, erosion, unsightly vegetation and other features that detract from the beauty and serenity of the area. Dirt and litter cover the roads and streets. There is a need for a general cleanup and follow-up education.

The major state highways in the area are generally adequate. Many county roads in the area are badly in need of improvements and repairs. Ditches and ditch banks are one of the major sources of silt as it is washed from the bare slopes and into streams. There is a great need to clear, shape and vegetate many of the roadsides for erosion control and beautification. Many bridges are too narrow and in need of repair, especially those of wood construction that are frequently traveled by heavy equipment.

Several hundred acres of timberland are damaged by oil and salt water wastes in Union, Ouachita, Columbia, Lafayette, Nevada, Calhoun, Miller and Hempstead Counties. In addition to the pollution from these wastes, the land is left bare and streams become filled with silt from the exposed areas. A concentrated effort should be made to correct and control these problems. Research is needed to develop plants that will grow on these salty areas.





## Section IV

# POTENTIALS FOR DEVELOPMENT



## POTENTIALS FOR DEVELOPMENT

### SOCIAL CONDITIONS

Social conditions tend to improve as the resources of the area are developed. The population of the area is beginning to increase instead of decrease. Conditions seem favorable for this increase to continue. The area has plenty of open space, clean air and clean water to offer and this will encourage people to locate here.

New homes are being built and older houses improved through FHA and other financing programs. Education and training will improve. The needed trained workers, for the new industrial jobs, will be provided through the vocational technical schools and through the industries own training programs.

More medical doctors will move into the area along with the improved conditions and the increase in population. Foreman has recently obtained a new doctor through the efforts of the Mayor of Foreman and others.

### COMMUNITY FACILITIES

Many of the towns and communities are located in places where they can secure municipal and industrial water supplies through multipurpose flood prevention projects using assistance available through the PL-566 or RC&D programs. Others are located so they could secure water from Millwood Lake. The cost of distributing the water is usually expensive and the towns will need loan or grant money to help with their supply lines.

Recent enacted legislation authorized County Judges to locate sites and assist with solid waste disposal dumps. This will improve the solid waste problem as well as the progress made by some towns in setting up sanitary landfills.

A detailed engineering survey has been made for flood control in Ashdown and preliminary surveys have been made for the towns of Bearden, Bradley, Foreman, Fulton and Taylor. Flood control and drainage will greatly improve the health and living conditions in these towns.

### NATURAL RESOURCES

#### Forest Land

The forests within the project area play a vital part in the economy of the area. In addition to providing landowners with income, they provide raw material for forest-based industries.

According to the 1969 Forest Survey, timber volume is increasing in the project area which would indicate that the area will support more forest related industry.

Woodland site studies and interpretations from soil survey maps indicate a high potential for production of wood crops. The potential can be attained by the application of needed management practices such as stand improvement, tree planting, and improved harvesting. The annual potential yields from private non-industry woodlands are shown in the following table:

<u>Site 1/ Class</u>	<u>Acres</u>	<u>ANNUAL POTENTIAL YIELDS</u>		<u>Stumpage Value</u>	<u>Expanded Value</u>
		<u>Board Feet (Doyle)</u>	<u>Cords</u>		
<u>Pine</u>					
1	9,246	4,983,000	4,993	299,030	4,485,450
2	324,770	145,770,000	159,308	8,813,890	132,208,350
3	1,278,422	436,441,000	534,021	26,674,360	400,115,400
4	113,810	25,984,000	42,078	1,639,510	24,592,650
5	5,365	1,159,000	1,824	72,865	1,092,975
Total	1,731,365	614,337,000	742,224	37,499,655	562,494,825
<u>Hardwood</u>					
1	51,155	17,904,000	12,277	598,505	8,977,575
2	404,273	117,239,000	80,855	3,921,425	58,821,375
3	60,687	10,074,000	18,206	393,250	5,898,750
4	276	36,000	61	1,385	20,775
Total	516,391	145,253,000	111,399	4,914,565	73,718,475
<u>Redcedar</u>					
4	2,500	-----Posts	170,000	34,000	51,000
<u>Black Walnut</u>					
1	214	49,000	-----	21,070	316,050
2	1,302	299,000	-----	128,570	1,928,550
Total	1,516	348,000		149,640	2,244,600

Expanded value to the area is computed by multiplying the stumpage value (the price paid to the woodland owners) times 15; and is the net economic gains made from raw wood products (cutting, hauling, skidding; railroad and truck transportation of raw, semi-finished and finished products; gasoline, equipment, trucks; manufacturing; labor; etc.) in addition to the woodland owners benefits from wood products. Based on stumpage prices for 1970. (Woodland stumpage ratio value provided by Forest Service).



According to the Arkansas State Forestry Commission, the value of timber stumpage harvested in the project area during 1968 was approximately \$25,000,000. Assuming a value increase of 15 times after the various processing steps, the economic uplift to the project area during 1968 was approximately \$375,000,000. Site 1/ Class is indicative of the height dominate trees will grow in 50 years. For example, Site Class 1 indicates a 96' plus for loblolly growth in 50 years, while Site Class 5 indicates a growth of 65' or less. All site classes are directly related to specific identifiable soils. They cannot be related to a general map with any degree of dependable application due to the diversity of inclusions. However, these sites can be interpreted from detailed soils survey maps.

Sixty percent of the commercial forest land is in small private ownerships. The greatest potential for increasing economic returns from forest land lies with the small landowners since industrial and public forest lands are already at high production. Increasing production on these tracts will enable the area to attract more work using industries such as veneer and plywood mills, saw mills, pulp mills, and post and pole plants.

Increased timber production on these small private holdings is possible through more intensive timber management which does not interfere with the objective of the landowner. Practices which will increase yields on these tracts are:

A. Timber Stand Improvement - This practice includes pre-commercial thinning and removal of non-commercial or low value species as well as cull trees which are competing with desirable species. Many low value trees and poor grade trees of the better species can be removed during a commercial improvement cut.

Some hardwood stands may have so many cull trees that the application of chemicals is the most efficient way of removing the non-commercial trees in order to return the land to productive timber production. In most cases hardwoods will reproduce themselves without resorting to planting.

B. Improve Stocking - Restocking pine after the harvest and in other areas where adequate openings exist is necessary in order to increase timber yields. Some marginal hardwood stands can be converted to pines or superior hardwoods in order to increase production; however, the effect of hardwood conversion to pine on wildlife habitat in the area should be carefully considered.

C. Reduce Harvest Costs - Accelerated technical assistance should be furnished to landowners who have sufficient labor and/or capital to harvest their own timber, and are presently unable to secure such services. Properly managed forest lands help control air and water pollution in addition to the direct economic benefits to the local economy.

D. Wildlife Management - Improved forest management practices are building up the population of game species in the 12-county area. Accelerating more intensive timber management practices will further help to maintain the required habitat to support the large deer and quail population and reduce the danger of food shortages. The squirrel population can be maintained if their requirements for food and shelter are considered in the timber stand improvement work.

#### Cropland

The alluvial lands along the Red River are the most important crop producing areas. The four counties adjacent to this river produce 51.9 percent of the field crops of the project area. The principal crops grown in the project are:

	<u>Cotton</u> <u>(acres)</u>	<u>Corn</u> <u>(acres)</u>	<u>Rice</u> <u>(acres)</u>	<u>Soybeans</u> <u>(acres)</u>	<u>Total Crops</u> <u>(acres)</u>
1961	50,025	23,400	1,350	8,950	83,725
1965	34,840	10,800	1,890	14,250	61,780
1969	22,310	5,450	2,400	99,800	129,960

These figures indicate the trend in crop production the last few years. The acreage of soybeans has continued to increase each year in recent years. The increase was over ten-fold during the decade of the 1960's. This trend is expected to increase. According to the 1967 Conservation Needs Inventory, there are 121,786 acres of cropland in capability classes I, IIe, IIw and IIIw, that were not being used for field crops. This land is well suited for the production of soybeans. If the present trend continues, a sizeable acreage of pasture land will be plowed up and used for soybeans. There has been an increase in the rice acreage in recent years and there are large acreages of soils, particularly along the Red and Ouachita Rivers, suited for the production of this crop. Many soils in this area are suited for the production of peanuts and there has been an increase in the acreage devoted to this crop in recent years. However, acreage control programs will probably prevent a sizeable increase in the production of these crops for some time to come.

#### Grassland

A. Improved Pasture - The 1967 Conservation Needs Inventory shows 510,423 acres of improved pasture land in the project area, or 11.5 percent of the agricultural land. In addition, approximately 141,422 acres are utilized as native pasture. The improved pastures are composed of bermudagrass, dallisgrass, tall fescue, bahiagrass, white clover, arrowleaf clover and annual lespedeza. The primary native pasture plants are carpetgrass, broomsedge, paspalums and low panicum.

The number of cattle in the project area has increased steadily in the 1960's as follows:

<u>Year</u>	<u>Number</u>
1961	185,800
1965	199,600
1969	298,200

Fertilization of pastures with poultry manure, a by-product of the expanding poultry industry in the area, has been a major factor in the improvement of pastures and resulting increase in cattle numbers. The production of broilers has been as follows:

<u>Year</u>	<u>No. of Broilers</u>
1961	20,830,000
1965	40,837,000
1969	73,992,000

In 1969 there were 3,382,000 laying hens and 138,000 turkeys in the project area. An estimated 234,000 tons of litter was produced by all classes of poultry in 1969. Most of this was used to fertilize pastures.

With further expansion of the poultry industry, pastures will improve with the use of the additional manure, and cattle production will increase. With the use of poultry litter it is now possible to grow tall fescue on soils that formerly would not support a stand of fescue at low levels of fertilization. This has made it possible for farmers who have a source of poultry litter to grow fescue for winter grazing. The need for hay has been reduced, making livestock production more profitable.

B. Range and Native Pasture - There is a potential of increasing the grass yield from 40 to 65 percent by proper grazing use and brush control on the native pasture acreage. The yield of native hay from grasslands used for hay production can be increased to an average of two tons per acre with improved management and some fertilization. There is a potential of increasing the forage yield three-fold by brush control, deferred grazing and proper grazing use on approximately 150,000 acres of wooded rangeland.

A range conservationist assigned to the Southwest Arkansas RC&D Project could greatly enhance the proper grazing use and planned grazing system practices on the integrated grazing lands consisting of improved and native pastures, rangeland and grazable woodlands. Additional up-to-date cost return data for decision making is needed to properly implement an efficient livestock enterprise. The range conservationist would work closely with foresters, biologists, and others who assist landowners with multiple-use enterprises.

Adequate stock dipping and/or spray equipment could be provided by communities developing cooperatives and pooling their resources to treat their livestock for disease and parasite controls.

An increased calf crop of 15 to 25 percent can be realized by improved bulls, pregnancy testing of cows, and a controlled breeding season on good condition rangeland or improved pasture.

Through deferred rotation grazing systems standing crops of native grasses can be utilized during the winter period with supplemental protein, thus eliminating the long hay feeding period.

### Fish Farming

Fish farming has a bright future in the project area. Presently there are only a few catfish and bait minnow farms. Expanding water resources such as farm ponds, irrigation reservoirs, flood-water retarding structures, and larger lakes constructed by private individuals and public agencies indicate the need for additional catfish and bait minnow developments.

Catfish farming is an infant industry and has great potential for expansion in the area. Large metropolitan areas such as Texarkana, Shreveport, Dallas and Fort Worth are nearby and should provide an ample market. As catfish farming develops, processing and marketing facilities will also need to be proportionally developed and expanded.

Hundreds of farm ponds are being poorly managed. With improved management these ponds could be utilized for fishing and thereby furnish additional recreation and income to the area. Fish farms developed into fee fishing enterprises offer an especially attractive opportunity for future development.

### Water

The 13 potential small watershed projects in the area can contribute materially to the control of floodwater and sediment damage and in the management and development of water resources needed for expanded agriculture, municipal, industrial, fish, wildlife and recreational uses. The conservation program of the last thirty-five years has been primarily instrumental in the accomplishment of needed land treatments and adjustments.

Most farms have one or more sites for the construction of ponds, reservoirs or lakes. Many of these can be of sufficient size to provide irrigation water to vegetables and other high-income crops, as well as provide recreational opportunities.

The existing 102,480 acres of water in the form of streams, farm ponds, lakes and reservoirs in the project area, offers consider-







able opportunity for additional water-based, water-oriented, or water-using developments -- fishing, boating, irrigation, industrial development, etc.

The Geological Survey of the U. S. Department of the Interior has compiled basic data on streamflow, ground water and water quality as well as appraisal reports of water resources. This information is available through the Arkansas Geological Commission and will be very helpful in developing and managing water in the area.

### Fish and Wildlife

There are no shooting preserves now in the project area. Excellent opportunities exist for the development of a limited number of this type of enterprise.

Forest land game on private lands may be a sleeping giant. In many areas of the United States landowners command a handsome fee for the privilege of hunting. As the population increases the demand for hunting space will accelerate and income from hunting leases could be an important economic input.

Farm game such as bobwhites, doves, and rabbits also offer important economic opportunities to private landowners when properly developed.

Development of waterfowl areas offers potential for the area. These areas are primarily located in bottomlands where hardwood timber and crops can be conveniently flooded, thereby affording an opportunity for sound land use and management of such areas.

A number of public agencies have going programs in the development of fish and wildlife resources. The U. S. Department of Agriculture's Soil Conservation Service, Rural Environmental Assistance Program and Forest Service each have areas of responsibility in fish and wildlife resource development. The U. S. Department of the Interior's Fish and Wildlife Service furnishes fish for stocking farm ponds and reservoirs and assistance in fish and wildlife resource development. The Extension Service is the educational arm in this field. Various state agencies such as the Arkansas Game and Fish Commission, Arkansas Forestry Commission, Arkansas Publicity and Parks Commission and Arkansas Soil and Water Conservation Commission each perform important functions in their area of responsibility. All of these services and programs will need to be expanded or accelerated to meet the objectives of the project.

## Minerals

The total value of Arkansas mineral production in 1965 was 179 million dollars. The mineral production of the Southwest Arkansas RC&D Project area was 106 million which represents 60 percent of the total production of the state.

Petroleum products currently account for about 47 percent of the areas total mineral value; however, some of the oil wells are now failing. While the oil production is declining, there has been a big increase in the production of cement and bromine. One of the uses of bromine is in the manufacture of styrofoam and with the versatility of styrofoam the production of bromine will continue to increase. The increase in the building of highways, housing and other construction will cause a continued heavy demand for cement.

Expansion in the current output of additional minerals in the area is possible. This is particularly true in the case of stone, clay sand, and gravel. There are other known sources of minerals in the area that warrant production or further exploration. These are: stone in Hempstead, Ouachita, and Sevier Counties; clay in all counties; iron in Lafayette and Nevada Counties; salt in Ouachita County; lignite in Calhoun, Dallas, Howard, Lafayette, Nevada and Ouachita Counties; titanium in Hempstead and Howard Counties; greensand in Hempstead County; barite, lead, zinc and strontium in Howard and Sevier Counties; mercury in Howard County; and antimony in Sevier County.

## RECREATION AND TOURISM

In 1968, through the cooperative efforts of many agencies and organizations, an appraisal of the potentials for twenty-two kinds of outdoor recreation developments was made in all counties. The potentials for these developments varied considerably in this twelve county area. Vacation cabins, cottages and homesites; warm water fishing; and small and big game hunting were found to be the greatest and most consistent potential for development throughout the area. The appraisal also shows the potentials for other kinds of developments in one or more, but not all, of the counties in the project area. This appraisal should be reviewed and updated as appropriate for guidance in future recreation planning and development.

Lakes, ponds and streams cover an area of 102,480 acres or about 2.0 percent of the entire project area. This amount of water affords tremendous opportunities for water-based or water-oriented recreation developments. The heavy use of public installation, especially on week-ends, holidays and vacation seasons, makes it imperative that more consideration be given to private developments in order to meet the demands.



The results of this appraisal are as follows:

Developments	Counties											
	CALHOUN	COLUMBIA	DALLAS	HEMPSTEAD	HOWARD	LAFAYETTE	LITTLE RIVER	MILLER	NEVADA	OUACHITA	SEVIER	UNION
1. Vacation cabins, cottages, and homesites	M	M	M	M	M	M	M	M	M	M	H	M
2. Camp Grounds												
a. Vacation Site												
Camping Grounds	L	M	M	M	M	M	L	L	M	M	H	M
b. Pack Trip Camping	L	L	L	L	M	L	M	L	L	L	L	L
c. Transient Camping Grounds	L	M	L	L	M	L	M	M	L	M	M	M
3. Picnic and Field Sports Areas												
a. Game, Play & Target Areas	L	L	L	M	L	L	L	M	L	M	L	M
b. Bicycling	L	L	L	M	L	M	L	M	M	M	L	L
c. Picnicking Areas	L	L	M	M	L	M	L	M	M	M	M	M
4. Fishing Waters												
a. Warm Water Fishing	H	M	M	H	M	M	M	M	M	M	M	M
b. Cold Water Fishing	L	L	L	L	L	L	L	L	L	L	L	L
5. Golf Courses												
a. Standard and Par 3 Golfing	L	M	L	L	L	L	M	H	L	M	L	M
b. Driving Ranges and Miniature Golfing	L	L	L	L	L	L	M	H	L	M	L	M
6. Hunting Areas												
a. Small Game Hunting	M	M	M	M	M	M	M	H	M	H	M	M
b. Big Game Hunting	H	H	H	M	M	M	M	M	H	H	M	H
c. Waterfowl Hunting	M	L	L	L	M	M	L	M	L	M	L	M
7. Natural Scenic and Historic Areas												
a. Natural Areas	L	L	L	L	L	L	L	L	L	L	L	L
b. Scenic Areas	L	L	L	L	L	L	L	L	L	L	M	L
c. Historic Areas	L	L	L	M	L	L	L	L	L	L	L	L
8. Riding Stables	L	L	L	L	L	L	L	M	L	L	L	M
9. Shooting Preserves	L	M	L	L	L	M	L	H	L	M	L	M
10. Vacation Farms & Ranches												
a. Vacation Farms	L	L	L	L	L	L	L	L	L	L	L	L
b. Vacation Ranches	L	L	L	L	L	L	L	L	L	L	L	L
11. Water Sports Areas	M	M	L	M	M	M	M	M	L	M	M	M
12. Winter Sports Areas	Unsuited											

H - High Potential

M - Medium Potential

L - Low Potential

The number of tourists can be increased greatly by more widely advertising of historical places of interest. The greatest potential for recreation developments seems to be in the hilly sections of Howard and Sevier Counties alongside the clear running streams. Facilities for campers and fishermen are continuing to be built around Millwood Lake and other lakes now under construction. The sandy beaches of the Ouachita River in Dallas, Ouachita, Calhoun and Union Counties offer a great possibility for swimming areas.

The needed public parks and recreation areas can be developed with the assistance of Bureau of Outdoor Recreation matching funds. Even though the forest lands are generally supporting a good population of woodland game, such as deer, turkey and squirrel, there are considerable opportunities for further improvement in some localities through the application of good woodland practices that also favor wildlife. There are real opportunities to improve the number of farm game, such as quail, rabbit and dove, through the establishment of food plots. However, before much progress is made in either of these directions, the hunter-landowner relationship must be improved. An ever-increasing number of landowners are objecting to the intrusions to which they are subject and would be pleased to have less instead of more wildlife.

#### INDUSTRY

There is an abundance of labor (as the manpower resource surveys are pointing out) and a multiplicity of manpower training programs are available. More importantly, Southwest Arkansas is fortunate to have two vocational training schools (El Dorado and Hope) and one technical institute (Camden) that can provide virtually any training requirements necessary.

Transportation facilities are improving and community attitude and services are providing the atmosphere that is much more desirable to prospective industrialists than ever before.

Many resources are readily available in the area -- timber, stone (especially limestone), gravel, sand, clay, bromine, oil, natural gas, agriculture, livestock (including poultry), electric power, and fuel. Supplies are sufficient to support new or expanded industries. Pulp mills, veneer plants, furniture manufacturers, wood preserving plants, cement plants, brick plants, ceramic industry, food processing plants, etc., should be appropriate areas of expansion.

Industrial improvements related to agriculture and forestry products can have a stimulating effect on the planning and application of appropriate conservation programs, thereby improving the attractiveness and livability of the area. Non-profit organizations are available throughout the area to assist industry in obtaining plant sites, facilities, and financing. Some have already purchased or have options to purchase, desirable industrial sites. The state of Arkansas has liberal financing programs that have proven attractive to many industries.

The Southwest Arkansas Water District is a public agency with authority to withdraw and sell water from Millwood Reservoir to municipal and industrial consumers. The District has entered into a contract with the Corps of Engineers to store up to 150,000 acre-feet of water to meet the demands of its customers. The availability of this quantity and quality of water should have a favorable effect on the future industrialization of the area.

#### OTHER

Solid waste disposal is a problem in the project area. Paper containers, garbage, bottles, cans and other forms of litter can be found in even the remotest parts of the project area. However, if public apathy can be overcome and ample finances arranged, there are soils suitable for sanitary landfill operations throughout the project area.

Abandoned, delapidated buildings and idle cropland and grassland detract from the scenic attractiveness of the area. Repair or removal of these structures and the establishment of a pleasing or economic use of these unsightly acres will improve the beauty of the area.

Shaping and vegetating eroded roadbanks; screening junkyards and dump grounds; landscaping farmsteads and roadways; control of fire and insects; improved timber cutting practices; removal of scars created by crude oil and salt water spills; elimination of unpleasant or unsightly industrial emissions (smoke, odors, etc.) and so forth, would improve the attractiveness and livability of the area.

The Farmers Home Administration and other agencies have home loans available for building and improving housing. This improved housing along with better jobs will help the people to take more pride in their surroundings and assist with community improvements.





## Section V

# PROJECT OBJECTIVES



## PROJECT OBJECTIVES

1. MARKETS - Encourage the development of new and improved markets for wood products.
2. COMMUNITY FACILITIES - Encourage and assist towns, cities and rural communities in the improvement or development of water supplies and distribution systems, sewage disposal, parks, recreation and other facilities.
3. SOLID WASTE DISPOSAL - Encourage and assist counties, communities, towns and cities in establishing a system for collecting and disposing of solid waste through the sanitary landfill method.
4. HOUSING - Encourage the use of private and public loan funds to meet the needs of financing home construction or improvement.
5. WATER MANAGEMENT AND DEVELOPMENT - Treat watersheds to prevent or reduce flooding, reduce erosion, sedimentation, and pollution; provide needed drainage; and store high quality water for municipal, industrial, agricultural, recreational and fish and wildlife uses.
6. CONSERVATION PLANNING AND LAND TREATMENT - Accelerate the planning, application, and maintenance of appropriate measures for the conservation and development of all land, water, plant, fish and wildlife resources.
7. SOIL SURVEYS - Complete the soil survey of the project area in order that individuals, groups and units of government will have basic soil information on which to base planning considerations.
8. COMMUNITY AND URBAN DRAINAGE - Provide communities and towns with the engineering and financial help to correct wetness problems and thereby alleviate unhealthy conditions.
9. INDUSTRY - Assist groups in the establishment or expansion of industries especially those related to the processing of forestry and agriculture products.
10. EDUCATION AND TRAINING - Give active support to the improvement of existing educational systems and assist with expansion where needed, especially in the field of vocational training.
11. LIVESTOCK AND POULTRY - Encourage and assist in improving the disposal and utilization of animal waste resulting from increased livestock and poultry operations.
12. FISH AND WILDLIFE - Encourage the development of food and bait fish enterprises and assist with the establishment or improvement of wildlife habitat on public and private lands.
13. RECREATION - Accelerate the development of appropriate outdoor recreation enterprises in the project area to meet the needs of local residents and tourists.
14. SCENIC AND HISTORIC ATTRACTIONS - Assist in the preservation or orderly development of exceptional natural, scenic and historic sites.

15. BEAUTIFICATION - Eliminate unsightly features, preserve the natural beauty of the rural landscape, and improve the general appearance of urban areas.
16. PLANT MATERIALS - Encourage the use and testing of new plant materials on problem sites, such as oil and salt water waste areas, eroding roadways, streambanks and gullied lands.

## Section VI

# **ACTIONS PLANNED**





## ACTIONS PLANNED

It is the policy of the sponsors to develop a short-term plan to assist in the implementation of this project plan. This short term plan will list project measures by fiscal years, (1-5 years) and actions planned and estimated funds needed. The sponsor's Constitution and By-Laws govern operation procedures in developing project measures and setting priorities. Project sponsors have committees to set priorities and actions needed in carrying out project objectives. These committees will consist of the following:

Agricultural Business

Community Facilities and Human Resources

Industrial

Recreation and Wildlife

Forestry

Natural Resources

# PROJECT MEASURES

## DEFINITIONS AND CLASSIFICATIONS

This section of the plan contains the proposed project measures to be installed.

A project measure is defined as a proposed action which will help to conserve, develop, improve and utilize the resources of the area. Project measures are classified under the following categories:

- A. Accelerated Services and Land Treatments - The technical assistance increase above going program rate for soil surveys, conservation planning and application, and for other accelerated services necessary to meet project objectives.
- B. Land Use and Treatment Measures - These are programs and practices needed for implementing land use adjustments, conservation and resource development. They deal directly with the use and treatment of land, water and natural resources.
- C. Structural Measures - Measures having group or community benefits and requiring community action for planning, construction and maintenance. The primary purpose of these measures are for the control, management and utilization of water.
- D. Associated Measures - Measures that have to do with the facilities, activities or enterprises necessary for the utilization, processing, and marketing of natural resource products.
- E. Supporting Measures - These are measures which will help meet project objectives but may not be directly related to natural resource development and use. These are directed toward additional employment, improved housing, better community facilities and related activities.

## ACCELERATED SERVICES

### Soil Surveys

Soil surveys have been completed in Howard and Ouachita Counties, and are expected to be published about 1974. An additional 1,372,700 acres have been mapped in the other counties. Some 2,993,380 acres remain to be mapped in Calhoun, Columbia, Dallas, Hempstead, Lafayette, Little River, Miller, Nevada, Sevier and Union Counties. At the present rate of mapping, about 20 man-years will be required to complete the soil surveys. With present staffing it will be possible to complete the mapping by about 1980.

## Conservation Planning

Approximately 77 percent of the 17,240 operating units in the area have developed conservation plans. It is estimated that 5,365 of these plans are currently in need of revision. The ownership changes on approximately 4 percent of the operating units each year, or a total of 690 per year. Sixty percent of the 3,767 operating units without conservation plans are in need of conservation plans, and 50 percent of the outdated ones are in critical need of being revised and replanned as rapidly as professional planning personnel are available. When this is accomplished, a re-evaluation of the status of conservation planning will be made. There is also a need for the preparation of an undetermined number, yet many, community, group, and resource plans. These will command a high priority for use of accelerated personnel services.

## Other Accelerated Services

Other accelerated personnel services such as Conservation Technicians will be needed to accomplish the planned rate of acceleration, especially in forest land, cropland and grassland.

The Agricultural Extension Service will be asked to cooperate and provide educational and informational services to the area. The purpose of this is to expedite the orderly accomplishment of project objectives through the skillful use of mass media and group educational programs.

## ACCELERATED LAND TREATMENT

### Forest Land

These following forestry measures are proposed by the Forestry Committee to provide for needed woodland treatment.

1. The Arkansas Forestry Commission now provides three man-years of management and fire protection assistance to private landowners within the project. Soil Conservation Districts, industry and consulting foresters also provide technical help to private landowners. Additional technical assistance will be needed to accelerate the woodland program in the project area. Private industry and consulting foresters will be encouraged to furnish more assistance.
2. The Arkansas Forestry Commission, U. S. Forest Service, Arkansas Extension Service, Soil Conservation Districts, Soil Conservation Service and wood using industries will be asked to hold woodland workshops and demonstrations for logging operators, primary wood producers, landowners and manufacturers to improve woodland management, cutting and sawmilling practices.

3. The sponsors will increase emphasis on forestry through REAP (Rural Environmental Assistance Program), including special practices, increased payment rates and additional funds to permit expansion in the size of the areas treated annually.
4. The Soil Conservation Service in each district will be asked to accelerate its help to cooperators in the development and application of conservation plans for the entire operating unit, integrating the conservation use of the woodland resources with the rest of the unit. The Service will also provide forestry services as a part of their total technical service to accomplish these plans, if not otherwise available. The Arkansas Forestry Commission, private industry and consulting foresters will be asked to accelerate their help in developing forest management plans and applying forestry measures.
5. 4-H clubs, vo-ag classes and other youth groups will be asked to establish and operate school forests and/or forest projects with assistance from management foresters, industry foresters and others capable of giving technical assistance.
6. The Arkansas State Forestry Commission, the Soil Conservation Service, the Arkansas Extension Service, Industrial Foresters and the State Vocational Training Service will be asked to train individuals and groups such as the vocational agriculture classes in tree planting and TSI in order to develop contractors and woodland owner projects.
7. During the next fifteen years, plant 350,000 acres and release 700,000 acres. Cost for this work would be approximately \$22,000,000. At the end of 15 years, planted stands will have a value of approximately \$28,000,000 while released stands will increase in value by \$15,000,000.

To obtain desired acceleration in accomplishing forestry conservation practices will require substantial financial assistance.

Soil Conservation Districts will be encouraged to provide or arrange for contract service for TSI and tree planting to accomplish the above goals.

8. The Arkansas Forestry Commission with assistance from the U. S. Forest Service will be asked to survey the needs of the project for fire prevention and develop a plan for improvement in cooperation with the Soil Conservation Districts and the Extension Service. The objective of the plan will be to reduce the number of man-caused fires in the project area.



9. Soil conservation districts will be encouraged to make forestry tools, equipment and chemicals available for woodland owners and contractors. This will include tree planting machines, planting bars, tree injectors, chemicals, tree marking guns, tree marking paint, boundary marking paint and other related forestry tools and materials.
10. Soil conservation districts will be asked to provide a central tree storage in districts planting a large number of seedlings, in order to give proper care to seedlings from the time they are received from the forest nursery until they are planted.

### Cropland

Approximately one third of the 237,592 acres of cropland is adequately treated. The remaining two thirds need conservation treatment including such practices as contour farming, terracing, conservation cropping systems, crop residue management, diversions and agricultural water management. Average cost of planned land treatment will be about \$30 per acre for a total cost of about \$5,000,000 in a 10-year period. An estimated average annual net increase of \$20 per acre is anticipated as a result of the application of these practices. In 10 years this treatment will cause an increase in net return of over \$3,000,000 annually.

The installation of needed agricultural water management practices, including land forming and flood protection, will make the major contribution toward the realization of this average overall increase in income. However, the adoption of "no-till farming" on sloping lands will decrease the cost of production thereby increasing net returns. It will also reduce soil erosion. Application of appropriate land treatment measures will take the risk out of farming much of this land and make it possible to make greater use of other management practices such as fertilization, insecticides, herbicides, etc.

### Grassland

A. Improved Pastures - One of the objectives of the project is to increase beef cattle production. Proper grassland establishment and management, improved husbandry practices and disease control must be accomplished in order to reach goals set by the sponsors.

The 510,423 acres of existing tame pastures need conservation management. Some of the needed conservation measures are pasture and hayland planting, pasture and hayland management, proper grazing use, water facilities, brush and weed control, fertilization and liming. Planting is needed on 40,000 acres at an approximate cost of \$35 per acre. Approximately 75,000 acres

need to be renovated by preparing a seedbed, fertilizing and reseeding at an approximate cost of \$30 per acre. In addition, approximately 2,500 farm ponds are needed at an average cost of \$300. The total estimated cost of this work is \$4,400,000. As of January 1, 1961, there was a total of 298,200 beef cattle in the project area. When all of the grassland work is completed including that associated with grazable woodlands, it is estimated the same area will carry approximately 25 percent more cattle or a total of 372,750 head, an increase of 74,550. With improved forage and better livestock management, it is reasonable to expect a 50 pound increase in each calf marketed and an increase in the calf crop from 75 to 90 percent. These increases in herd size, market weight and percent calf crop will increase the annual income from beef cattle production from \$23,478,000 to \$40,257,000, an increase of \$16,779,000.

The services of livestock specialists through the Arkansas Extension Service will be needed to accomplish some of the improved husbandry practices associated with this acceleration.

B. Native Grasslands - The application of proper grazing use and brush control will improve the 15,388 acres of rangeland in the Texas Blackland Prairie section of the project area to the extent that the net return to land, labor and management will be increased \$1.60 to \$2.00 per acre per year.

An additional 195,128 acres of land now in savannahs and/or non-commercial woodlands will require brush control, using selective herbicides, fencing, water facilities development, deferred grazing, and the establishment of grazing systems.

The demand for multiple use of woodlands is increasing. Excellent opportunities exist in the project area for improving the wildlife and recreational uses of the forest land. Incorporating regulated grazing by domestic livestock in woodlands can be beneficial both from the standpoint of cattle, wildlife and timber production, especially in pure stands or mixed stands of pine. Cattle will either need to be excluded or grazed cautiously in pure hardwood stands.

Forage production under good timber management may vary from 600-1500 pounds of air dry herbage annually or an average of approximately 1000 pounds per acre. Conservatively harvesting this production on approximately two million acres of pine and mixed pine-oak could add materially to the livestock industry and result in a significant impact on the economy of the area.

Conservation treatment on rangeland and related grazing lands involves planning and applying range management practices in three broad categories:

1. Plant management practices
  - a. Proper grazing use
  - b. Deferred grazing
  - c. Planned grazing system
2. Accelerating practices
  - a. Brush control - timber stand improvement
  - b. Range seeding
3. Livestock control practices
  - a. Fencing
  - b. Water facilities
  - c. Portable salt and mineral boxes
  - d. Feed troughs
  - e. External parasite control - back - scratchers

Planned grazing systems will involve planning improved pastures in conjunction with the native pasture, rangeland and grazable woodlands to take full advantage of all forages. This will improve the overall efficiency of forage harvesting and increase the income of the woodland-livestock operation. A year around forage program will need to be fed to balance the feed requirements.

Improved management of beef cattle by controlling insects and parasites and increasing the percent of calf crop will be necessary to reach the RC&D project goals.

### Fish and Wildlife

Fish and wildlife are primary land uses throughout the project. However, they are more often secondary to cropland, grassland, forest land, and water areas developed primarily for other uses. Odd areas are frequently devoted to wildlife uses. Public and private ownership are both involved. Only a limited amount of this land is currently leased or subject to fee uses.

It is anticipated that many special projects for improving fish and wildlife habitat will be submitted and approved by the Steering Committee. To accomplish these projects, the sponsors will request accelerated services of biologists through the Soil Conservation Service, Arkansas Game and Fish Commission, Arkansas Extension Service, and others with this form of expertise.

### Recreation

Private and public outdoor recreation developments will continue to increase in the project area. A large number of recreational-type projects have been submitted for inclusion in the original plan; many others are being considered.

These include a variety of facilities incident to the development for expansion of recreation potentials applicable to the project area. The major portion of the proposed developments are associated with water sports areas, camp ground developments, picnic and field sports areas, warm water fisheries, hunting areas and standard golf courses. City parks and recreation centers are also proposed for several cities and towns in the project and it is anticipated that many more will be initiated early in the stage of the project implementation. Other recreation developments having potential for development are being considered in an effort to have as broad or complete a recreational program as needed and feasible for the project.

Accelerated technical services along with increased loan and grant funds will be needed to meet the desires of local people, including sponsors of the project. This will require the efforts of many individuals, groups, and agencies of government, such as the Bureau of Outdoor Recreation, Arkansas Department of Planning, Soil Conservation Service and others.

According to the Arkansas Statewide Comprehensive Outdoor Recreation Plan, outdoor recreation developments need to be doubled to meet current and immediate unmet needs. This degree of acceleration will directly and indirectly create many additional jobs, increase the annual returns from recreational enterprises, and make the project area a better place in which to live.

#### Other Lands

There are thousands of miles of private, county, state and federal roads in the project area. Many miles of these roadways have raw areas that are actively eroding. These unprotected areas need to be treated to reduce sedimentation and pollution in streams and reservoirs, to reduce the cost of road maintenance, to improve the appearance of the countryside, and to reduce driving hazards.

The sponsors propose that Public Law 566 and Resource Conservation and Development funds be provided for cost-share assistance. County Judges, Arkansas Highway Commissioners, and federal officials will be encouraged to increase the treatment of unprotected roadways. Technical assistance will be provided through accelerated services provided by the sponsors.

The sponsors propose to accelerate technical assistance needed for sound land use planning and development in urban, county and multi-county areas.

## PROPOSED PROJECT MEASURES

### ACCELERATED SERVICE AND LAND TREATMENT

Name and Number	Location	Description
Accelerated Soil Surveys AW-1	Area Wide	Soil surveys will be accelerated throughout Columbia, Hempstead, Lafayette, Little River, Miller, Nevada, Sevier, and Union Counties, also the northeast portion of Calhoun and the northern and central parts of Dallas County for planning and application of project measures.
Accelerated Conservation Planning AW-2	Area Wide	Additional conservationists are needed to meet the planning needs of changing farming operations and the changes in farm ownership.
Accelerated Conservation Application AW-3	Area Wide	Additional technical help is needed in establishing the needed conservation practiced in forestry, cropland, grassland, fish and wildlife, recreation and on other lands.

### LAND USE AND TREATMENT MEASURES

Name and Number	Location	Description
Ernest Cemetery Road Roadside Erosion Control CA-5	Calhoun County	Erosion is occurring on the road-banks and ditches of the road and silt is washed into nearby streams. It is proposed that the roadsides and ditch banks be sloped, shaped and vegetated to prevent erosion and beautify the roadway. It is anticipated that some RC&D funds will be used to assist the County Judge with the expenses. Approximately 5 miles of roadsides will be treated



Land Use and Treatment Measures continued

Name and Number	Location	Description
College Hill Road Roadside Erosion Control CO-4	Columbia County	Problems are similar to above. Approximately 5 miles of road- sides will be treated.
Old Magnolia- ElDorado High- way Roadside Erosion Control CO-5	Columbia County	Problems are similar to above. Approximately 5 miles of road- sides will be treated.
Beech Grove Bucksnot Roadside Erosion Control D-8	Dallas County	Problems are similar to above. Approximately 7 miles of road- sides will be treated.
Possum Hollow Road Roadside Erosion Control HO-3	Howard County	Problems are similar to above. Approximately 2 miles of road- sides will be treated.
Waldrop Lateral Roadside Improve- ment LR-4	Little River County	Problems are similar to above. Approximately 2 miles of road- sides will be treated.
Richmond Community Roadside Improvement LR-6	Little River County	Problems are similar to above. Approximately 1 mile of road- sides will be treated.
Hawkins Lateral Roadside Improve- ment LR-7 2/ M-7	Little River County	Problems are similar to above. Approximately 1½ miles of road- sides will be treated.
Cale Road Road- side Erosion Control N-1	Nevada County	Problems are similar to above. Approximately 2 miles of road- sides will be treated.
County Road Erosion Control N-2	Nevada County	Problems are similar to above. Approximately 1 mile of road- side will be treated.

Land Use and Treatment Measures continued

Name and Number	Location	Description
Pace City Road Roadside Erosion Control      O-2 <u>7</u> /            O-21	Ouachita County	Problems are similar to above. Approximately 8½ miles of road- sides will be treated.
Mt. Holly Road Roadside Erosion Control      U-1 <u>13</u> /           U-30	Union County	Problems are similar to above. Approximately 5 miles of road- sides will be treated.
Highway 317 Roadside Erosion Control      LR-10	Little River County	Problems are similar to above. Approximately 3 miles of road- sides will be treated.
Corinth Community Erosion Control HO-4 <u>1</u> /              M-6	Howard County	Erosion is occurring on the Corinth Community Building grounds. The 4-H Club and other groups will shape the grounds and vegetate the area to stop erosion and silting of nearby streams.
DeQueen High School Grounds Erosion Control S-2	Sevier County	The school grounds and street ditches are severely eroded and unsightly. Silt from these areas is washed into nearby streams. It is proposed that the grounds and street banks be shaped and vegetated to stop the erosion and to beautify the area.
Vegetate Oil Polluted Areas in Union Co. U-2 <u>12</u> /            U-28	Union County	Oil and salt water have polluted several hundred acres of land, killing all vegetation. Erosion occurs on these areas and streams become filled from silt. Research is needed to find plants that will grow on these areas.

# Land Use & Treatment Measures

Name and Number	Location	Description
Texarkana Airport Erosion Control <u>1/</u> M-6	Miller County	Erosion adjacent to the runways and taxiways has caused large gullies that are becoming a safety hazard. Sediment is also polluting nearby streams. The Airport Authority has requested RC&D funds to treat and vegetate the areas.
Miller County Roadway Erosion Control <u>2/</u> M-7	Miller County	Problems are similar to above. Approximately 30 miles of road-sides will be treated.
Ouachita County Roadside Erosion Control <u>7/</u> O-21	Ouachita County	Problems are similar to above. Approximately 600 miles of road-sides will be treated.
Erosion Control on Utility Lines Rights- of-Ways <u>12/</u> U-28	Union County	Eroding areas on power and gas line rights-of-ways will be treated and vegetation planted that will control erosion and provide food for wildlife.
Union County Roadside Erosion Control <u>13/</u> U-30	Union County	Problems are similar to above. Approximately 700 miles of road-sides will be treated.

# STRUCTURAL MEASURES

Name and Number	Location	Description
Big Creek Watershed CO-1	Columbia County	This project would provide flood prevention for a 30,000 acre area. It would also provide a dependable supply of water for Magnolia, Waldo and McNeil. The sponsors are also interested in adding recreation facilities. This is a PL-566 project.
Brushy Creek Watershed D-1	Dallas County	This project would provide flood protection for 1,400 acres of cropland near Sparkman. Sparkman could use site as a municipal water supply. This is a PL-566 project.
Terre Rouge Watershed HE-1	Hempstead County	This watershed is comprised of approximately 157,000 acres of drainage area, 50,000 acres in Hempstead County and the remainder in Nevada County. There will be about 10 floodwater retarding sites--8 in Hempstead County and 2 in Nevada County. This will provide flood protection for 21,400 acres. The City of Hope is interested in municipal water at one of the sites. This is a PL-566 project.
North Fork of Ozan Creek Watershed HE-2	Hempstead County	This PL-566 watershed is comprised of 46,000 acres. Planned measures include 8 floodwater retarding structures that will provide flood protection for 5,000 acres. An improvement district has been formed, benefits assessed and construction is in progress.
Ozan Creeks Watershed HE-3	Hempstead County	This project of 65,000 acres is designed to protect 11,400 acres from flooding. There will be 22 floodwater retarding structures in this PL-566 project. The town of Blevins is interested in municipal water at one site.

# Structural Measures continued

Name and Number	Location	Description
Haney Creek Watershed LR-16	Little River County	This watershed is located in the southcentral part of Little River County. It comprises 15,380 acres and will provide watershed protection, flood prevention and agriculture water management. This is a PL-566 project.
Kelly Bayou Watershed Recreation Development M-2	Miller County	This is a joint project between Arkansas and Louisiana. The proposed lake would provide irrigation water for an area in Louisiana and recreation benefits for Miller County residents in Arkansas. This is a PL-566 project.
Buzzard Bluff Cut-Off Channel M-5	Miller County	This proposal would divert water into the river 25 miles north of its present outlet. Completion of the project would reduce flooding of cropland. Assistance is expected through the Corps of Engineers.
Terre Rouge Creek Watershed N-10	Nevada County	This PL-566 watershed project is located in Nevada and Hempstead Counties. The watershed is comprised of about 157,000 acres. There are 10 floodwater retarding structures planned, 8 in Hempstead County and 2 in Nevada County.
Taylor Surface Drainage CO-3	Columbia County	The terrain in and around Taylor is relatively flat. After a heavy rain, water stands for several hours. Several houses near the town still have outdoor toilets and floodwater in and around these constitute a health hazard. A complete drainage system is planned.



# Structural Measures continued

Name and Number	Location	Description
Jug and Acruman Creek Drainage Improvement D-6	Dallas County	Parts of Fordyce are subject to flooding. The improvement and enlargement of these creeks would reduce the flood damage to roads, streets, homes, industrial and recreational areas.
Sparkman Drainage D-7	Dallas County	Sparkman is located on level terrain and flooding frequently occurs. When Brush Creek Watershed project is completed, an outlet will be provided to drain Sparkman. The city drainage will improve the health and living conditions.
Fulton Agriculture HE-4	Hempstead County	This project would provide the needed drainage for about 5,000 acres of cropland. This would reduce crop damage, improve tillage operations and help with weed control. The area is in an old drainage improvement district.
Blevins Surface Drainage HE-6	Hempstead County	The terrain in Blevins is relatively flat. Drainage is needed for some low areas. This will eliminate mosquito infested areas and improve living conditions.
Little Missouri River Drainage Project HE-7	Hempstead County	This project is located in the NE corner of Hempstead County and drains into the Little Missouri River. It will improve the drainage on about 6,000 acres cropland.
Fulton City Drainage HE-9	Hempstead County	The terrain in and around Fulton is nearly level. Drainage is needed. A request has been made to the SCS for a survey.

# Structural Measures continued

Name and Number	Location	Description
Yellow Creek Watershed HE-10	Hempstead County	The drainage area of the project is about 11,300 acres. The project is located in Howard and Hempstead Counties. The proposed works of improvement include measures for watershed protection, flood prevention, agriculture water management, erosion and sediment control.
Cotton Shed Recreation Area HO-2	Howard County	There are no established boat launching ramps on the north side of Lake Millwood and ramps on the entire lake are limited. It is proposed that launching ramps and other facilities be constructed on the area known as cotton-shed.
Spirit Lake Watershed L-1	Lafayette County	This project would improve drainage on about 7,000 acres of cropland in the Red River Bottomlands. The area is in an active drainage improvement district. It is estimated that the cost of improvements will be \$50,000.
Spirit Lake Recreation Project L-2	Lafayette County	This project is to construct camping and picnicking facilities on Spirit Lake. An application will be made to BOR for matching funds.
Bradley Surface Drainage L-7	Lafayette County	The terrain in and around Bradley is flat. After a heavy rain, water stands for several hours. Several houses still have outdoor toilets and flood water in and around these constitute a health hazard. A complete drainage system is planned.

Structural Measures continued

Name and Number	Location	Description
Ashdown Floodwater Control Project LR-1	Little River County	Flooding frequently occurs in Ashdown. In some of the outer limits outdoor toilets are still in use. These conditions cause serious health hazards. A detailed survey has been made and ditches designed to alleviate the flooding. Estimated cost is \$270,000.
Bois d'Arc Bayou Drainage LR-2	Little River County	This proposed drainage project would improve drainage on about 9,000 acres of pastureland and cropland near Ogden. About 9 miles of main and lateral ditches will be required. The estimated cost is \$160,000.
Highway 41 Group Drainage Project LR-3	Little River County	This project is located south of Walnut Bayou. Seven landowners are involved and the completed project will improve drainage on 2,000 acres of cropland and pecan orchards. Application is being made to the ASCS for cost share payments. Estimated cost is \$15,500.
City of Foreman Drainage LR-5	Little River County	Flooding occurs frequently in part of the urban areas. Completion of this project would improve living conditions, reduce flooding on the fair grounds and urban area.
Brown Elementary School Drainage LR-8	Little River County	The school grounds are flat and water stands for a long period of time after a rain. Some fill dirt is needed in addition to shallow ditches. The school and county have the equipment for doing the work but some engineering assistance is needed.

Structural Measures continued

Name and Number	Location	Description
Millwood Park Erosion Control LR-11	Little River County	An eroded area in the boat launching area will be treated to check silt from washing in the lake. Water control structures and vegetating practices will be installed.
French Creek Watershed LR-12	Little River County	Construction of a dam for flood-water control on French Creek would reduce flooding and silting down stream. Water from the lake could be used by the Foreman Cement plant and possible as a source of water for a rural water supply.
Murray, Carrol and Butler Drainage Project LR-15	Little River County	This watershed project is needed for agriculture water management. The project is located four miles southwest of Foreman. It will benefit three farms.
Alex Smith Park Development M-1	Miller County	The county now owns this tract of land containing 320 acres. Much of the land is rolling and has a cover of mature pine trees. There is also a shallow, 40 acre lake. There are several picnic tables now being used. It is proposed that a water and lighting system be built. Restrooms and other facilities are needed. A request will be made to BOR for matching funds.
Bearden Drainage O-1	Ouachita County	The city of Bearden has a serious flooding and drainage problem. The area is generally flat, there are very few existing ditches and they are inadequate. Many of the houses in the outer edges have open toilets and a serious health hazard exists. A complete drainage system is proposed.

# Structural Measures continued

Name and Number	Location	Description
Loutre Creek Bottoms Flood Control U-29	Union County	Frequent flooding occurs along Loutre Creek. This project when completed would improve 1,000 acres of pasture, many miles of roads and facilitate the harvesting of wood crops.
Bragg Lake Park 0-3	Ouachita County	This proposal is to develop camping, boating, fishing, and picnicking on Bragg Lake. The county owns the property which contains the 200 acre lake. Application has been made for RC&D funds.
Ouachita River Recreation Development 0-7	Ouachita County	This proposal is for the development of recreation facilities along the Ouachita River.
White Oak Creek Greentree Reservoir and Picnic Area 0-12	Ouachita County	This proposal is to develop a greentree reservoir on White Oak Creek below White Oak Lake. The reservoir will be filled from the lake. The reservoir will be used for duck hunting and a duck rest area. The reservoir will be drained during the summer months to preserve the trees. Picnic areas will be established on part of the land. The Arkansas Game and Fish Commission will be the sponsors.
Sevier County Rivers Recreation Developments S-3 14/ U-29	Sevier County	This proposal is to develop roads, launching, camping, picnicking and swimming area on the Rolling Fork, Little River and Cossatot Rivers in Sevier County. This will be worked through the Arkansas Game and Fish Commission and other groups.



# ASSOCIATED MEASURES

Name and Number	Location	Description
Thornton Water and Sewer Project CA-2	Calhoun County	An application has been made to the Farmers Home Administration for a grant to enlarge Thornton's water and sewer system. Approximate cost is \$270,000.
Locust Bayou Water System CA-3	Calhoun County	An application has been made to the Farmers Home Administration for a grant to install a water system for Locust Bayou. Approximately \$80,000 is the estimated cost.
Calhoun Recreation Club CA-4	Calhoun County	Recreation facilities are limited in Calhoun County. A recreation club with swimming pool and other outdoor activities is proposed. An application has been submitted to FHA for a loan and to BOR for matching funds.
Fordyce City Park D-2	Dallas County	Fordyce has 20 acres of land on which they want to develop a city park for outdoor activities. They have made application and have received matching funds from BOR.
Sparkman Gas System D-4	Dallas County	This proposal is to get natural gas extended to Sparkman. The residents must now depend on LP bottled gas. If Sparkman is to attract new industry and grow it will be necessary to get a gas system for the town.
Hope Parks Development HE-8	Hempstead County	This proposal is to expand the recreation facilities in the two city parks in Hope. Recreation facilities will also be added to a 60 acre tract of land near Hope. A request will be made for Bureau of Outdoor Recreation matching funds.

# Associated Measures

Name and Number	Location	Description
Red River Wildlife Federation <u>3/</u> M-8	Miller County	A local Wildlife Federation will be formed and will work to make the public more conscious of game laws, promote closer harmony between the public and the Arkansas Game and Fish Commission, encourage the development of Sulphur River Wildlife Area, etc.
Woodland Workshops <u>4/</u> O-18	Ouachita County	The Ouachita County Conservation District and Camden Chamber of Commerce will organize and conduct a series of woodland workshops on timber management, wildlife management, fire protection, and taxation.
Mist Blowing for TSI <u>5/</u> O-19	Ouachita County	The Ouachita County Conservation District will purchase and operate the equipment for a needed mist blowing operation for timber stand improvement.
Bearden Water and Sewer Improvement <u>6/</u> O-21	Ouachita County	Bearden has applied for a grant from HUD and loan from FHA for the improvement and enlargement of the water and sewer system.
Harmony Water Association <u>8/</u> U-24	Union County	This proposal is to develop a water system for the Harmony community.
Old Union Water Association <u>9/</u> U-25	Union County	Water will be supplied from El Dorado and system expanded to serve 220 families in the Old Union community.
Sweet Home Water Association <u>10/</u> U-26	Union County	Application has been made to FHA for a loan to install a water system for the Sweet Home community.
Sandy Land Water Association <u>11/</u> U-27	Union County	Application has been made to FHA for a loan to install a water system for the Sandy Land community. This would serve 90 families.

## Associated Measures continued

Name and Number	Location	Description
Promotion of Locally grown Grain HE-11	Hempstead County	A large amount of grain for local feed mills is shipped into Hempstead County. This proposal is to promote the growing of the grain locally.
Fulton Water and Sewer HE-12	Hempstead County	Fulton needs to expand its water system and construct a sewage system. An application has been made to FHA for a loan and grant.
Buckner Water System Improvement L-3	Lafayette County	Buckner's water supply is acid and contains an excess amount of iron. An application has been made to FHA for assistance in securing a new filtering system.
Lewisville City Park L-4	Lafayette County	Lewisville residents are interested in developing a city park. This project is sponsored by the Rotary Club. An application will be made to BOR for matching money to install the facilities.
St. James Water Association L-5	Lafayette County	The St. James community will construct the necessary water lines and will purchase water from Lewisville. The individual systems now being used are generally not adequate.
Walnut Hill Water Association L-9	Lafayette County	The Walnut Hill Water Association will construct the necessary water lines and install meters. Water will be purchased from Bradley. Application has been made to FHA for a loan.
Millwood Lake Pavillion LR-9	Little River County	Millwood Lake is heavily used in the summer months by boaters, fishermen, campers and picnickers. There are no public shelters for group meetings. This proposal to construct a pavillion is sponsored by Rev. Carr Dee Racop, Methodist Minister, at Ashdown.

Associated Measures continued

Name and Number	Location	Description
Blackland Water District LR-14	Little River County	Ground water in the blackland area of the county is very limited. This proposal is to develop a supply, treatment and distribution system to serve the area.
Madeville Recreation Center M-3 3/ M-8	Miller County	It is proposed that an abandoned school building in Madeville be developed for the community residents. The center could include reading rooms, tennis courts, game rooms, meeting rooms, etc.
Prescott Skeet and Rifle Range N-3	Nevada County	This proposal is to construct a skeet shoot and rifle range for the residents of Prescott and Nevada County.
Woodland Demonstration Plot N-5	Nevada County	Demonstration plots are needed to show woodland owners good management practices. It is proposed that plots be located and identified with signs to show planting, TSI, Thinning and harvesting. The Nevada County Conservation District will furnish the signs and SCS personnel will locate the plots and arrange to get the signs up.
Reader Water System N-6	Nevada County	The residents of Reader presently have individual water systems. An application has been made to FHA for a loan to develop a central water system.
Bluff City Water System N-8	Nevada County	The residents of Bluff City have individual water systems. The water is of poor quality. The proposal is to develop a central water supply and distribution system.

Associated Measures continued

Name and Number	Location	Description
Develop Seed Harvesting Facilities 0-8	Ouachita County	A proposal to provide seed harvesting and cleaning facilities for Ouachita County. This will be provided through the Ouachita Conservation District.
Stephens Water System Improvement 0-9	Ouachita County	An application has been made to FHA and EDA for a loan and grant to expand the present water system. \$81,500 loan and \$81,500 grant.
Pine Hills Country Club Development 0-13 4/ 0-18 5/ 0-19 6/ 0-21	Ouachita County	Plans are to develop a 9-hole golf course, swimming pool, club house, picnic area and play grounds.
DeQueen Boy Scout Camp Recreation Development S-1	Sevier County	This proposal is to develop outdoor recreation facilities at the scout camp.
County-Wide Water System S-5	Sevier County	This project will involve extension of water lines from the existing city water systems of DeQueen, Horatio, Lockesburg and Gillham. These lines will extend into rural areas and provide an adequate and sanitary water supply for rural residents.
DeQueen Reservoir Complex S-7	Sevier County	This proposal is for a recreational complex including lodging facility, trailer park, camping grounds, hiking trails and boat dock and launching facilities. The complex is to be built on DeQueen Reservoir.



Associated Measures continued

Name and Number	Location	Description
Faircrest Water System U-3	Union County	The Faircrest Water Association has made an application to FHA for a loan and grant to develop a water system.
Quinn Water System U-5	Union County	The Quinn Water Association would serve about 90 families. A grant and loan will be necessary to carry out the project.
Wesson-Newell Water Association U-6	Union County	The Wesson-Newell Water Association would serve about 160 families. A grant and loan will be necessary to carry out the project.
Wildwood Water Association U-8	Union County	This water association would provide water to about 200 families and would permit the area to enlarge and develop.
Mt. Holly Water Association U-9	Union County	The Mt. Holly Water Association would provide water to about 100 families. A loan will be needed for the project.
Norphlet Water and Sewer System U-11	Union County	Norphlet's water and sewerage systems need to be enlarged and some of the present lines replaced. Estimated cost \$70,000.
Parker Chapel Water Association U-12	Union County	The Parker Chapel Water Association would provide water to 140 families. Estimated cost of installation is \$100,000.
Buelah Grove Water Association U-13	Union County	This association now serves 21 families. It should be expanded to serve another 175 families. Estimated expansion cost is \$100,000 to \$150,000.

Associated Measures continued

Name and Number	Location	Description
Smackover Golf and Tennis Court U-14	Union County	This would provide needed recreation for Smackover residents. Local people have \$25,000 available but the total cost is estimated to be \$225,000. A loan will be needed.
Felsenthal Recreation Project U-15	Union County	The completion of this project would provide an area for fishing and hunting. The completion of the dam would provide flood control and aid navigation. It is proposed that the project will be started in 1972.
Woodland Demonstration Plots U-23	Union County	Demonstration plots are needed to show woodland owners good management practices. Plots will be located and identified with signs to show planting, TSI, thinning and harvesting.

SUPPORTING MEASURES

Name and Number	Location	Description
Hampton Sanitary Landfill CA-1	Calhoun County	Hampton uses an open dump which is a health hazard in addition to being unsightly. It is proposed that land be purchased and a sanitary landfill be established.
Community Solid Waste Dumping Sites CA-6	Calhoun County	Disposing of solid waste is a problem in the county with dumping occurring often along public and private roads. The County Judge is working with leaders to provide a dumping place in each community.
Taylor Sewerage System CO-2	Columbia County	The present sewerage system in Taylor is inadequate and a new lagoon is needed. An application has been made to HEW for a grant.

Supporting measures continued

Name and Number	Location	Description
Carthage Sewerage System D-3	Dallas County	Most of the residents of Carthage use septic tank systems. A sewerage system is necessary for Carthage to grow. An application has been made to FHA for assistance.
Fordyce-Sparkman Road Improvement D-5	Dallas County	This road connects the two largest towns in Dallas County. It is proposed that this road be included in the Arkansas State Road System. Most of the road is not paved and needs to be improved as a farm to market road.
Blevins Sewerage Project HE-5	Hempstead County	The residents of Blevins use septic tanks. An application has been made to FHA for a loan and grant to construct a sewerage lagoon.
Howard County Rural Waste Disposal HO-1	Howard County	The dumping of solid waste is a problem in most of the rural areas. It is proposed that a number of places be provided to dispose of trash and the trash covered weekly.
Bradley Sewerage System L-6	Lafayette County	An application has been made to FHA for a loan and grant for a sewerage system and lagoon.
Walnut Hill Self-Help Housing Project L-8	Lafayette County	Low income families will do most of the work, under the supervision of a foreman, in construction of their own homes. Transportation will be provided by OEO and FHA will provide a loan at a low rate of interest.
Securing a Physician for Foreman LR-13	Little River County	Foreman does not have a physician and the residents must go to Texarkana, Ashdown, and other towns for needed medical care. An organized effort is being made to get a doctor to locate in Foreman.

Supporting Measures continued

Name and Number	Location	Description
Fouke Sewer System M-4	Miller County	The town of Fouke has a water system but no sewerage system. A sewerage system is needed to improve the sanitary conditions.
Prescott Sanitary Landfill System N-4	Nevada County	Prescott now uses an open pit for solid waste disposal. It is proposed that land be bought and a sanitary landfill method be installed.
Emmet Community Disposal System N-7	Nevada County	The present dump is located in a low area and adds to stream pollution. A suitable site is needed and an orderly system used for disposing of solid waste.
Community Solid Waste Dumping Site N-9	Nevada County	Disposing of solid waste is a problem in the county with dumping occurring often along public and private roads. The County Judge is working with leaders to provide a dumping place in each community.
Stephens Low Rent Housing O-4	Ouachita County	This proposal is to develop 18 units of low rent housing for the elderly and disabled.
Ouachita County Litter Disposal System O-5	Ouachita County	A system is proposed, on a county-wide basis, to pick up and deposit waste in designated places. This will be through interested groups, organizations, the county judge, and the county health offices. An effort will be made to get the Green Thumb project established to assist with the program.
Ouachita County Green Thumb Project O-6	Ouachita County	This project will provide work for some otherwise unemployable people. They can also assist on some of the other county proposals.

# Supporting Measures continued

Name and Number	Location	Description
Seminary Cemetery Restoration 0-10	Ouachita County	This is an old cemetery that was in use in the early 1800's when a school was located there. The area is grown up in weeds and bushes. It is proposed that it be restored for its historical value.
Ouachita County Rat Control Project 0-11	Ouachita County	This proposal is to work through the FFA Chapter in Fairview High School and provide rat bait at a low cost to residents of the county and promote a rat control program.
Stephens City Park Development 0-14	Ouachita County	Development of this park will provide recreation for approximately 2,000 people. Green Thumb workers will assist with the project.
Bearden City Parks Development 0-15	Ouachita County	The development of three parks in Bearden will provide recreation for some 1,500 people. The area will be beautified and will furnish a rest stop for traveling people.
Camden City Parks Development 0-16	Ouachita County	The development of two city parks in Camden will provide recreation facilities for some 18,000 residents. Green Thumb workers will help to develop the parks.
Fairview Racquet Club 0-17	Ouachita County	Tennis courts will be built and the area landscaped. This will provide recreation for about 100 families in the Fairview community near Camden.
Housing Development S-4	Sevier County	Sevier County Rural Development Authority owns the land for housing and will assist with loans when money is available.



Supporting Measures continued

Name and Number	Location	Description
Feasibility Study for a Multicounty Sanitary Land-fill and Collection System S-6	Sevier County	It is proposed that a study be made for a solid waste disposal system covering Sevier and adjoining counties. A system properly installed would reduce pollution to streams and would enhance the landscape.
Community Disposal System for Mt. Holly, Newell, Parkers Chapel, Lawson and Urbana U-4	Union County	This proposal is to develop a waste disposal area for each community. The county judge will cooperate but some local financial help is needed.
Calion Sewer Disposal System U-7	Union County	This proposal is to develop a sewerage system for the residents of Calion. This would serve about 150 families.
Huttig Sewerage System Expansion U-10	Union County	The sewerage system of Huttig needs to be expanded due to population growth and new industry. Estimated cost is \$102,000.
Union Memorial Hospital Expansion U-16	Union County	This proposal is to expand the county hospital to at least 100 more beds. County and Hill Burton funds will be used.
Warner Brown Hospital Expansion U-17	Union County	This proposal is to expand the Warner Brown Hospital facilities. \$1,000,000 is available from the Barton Estate.
Union County Youth Center U-18	Union County	The Union County Youth Center will provide needed recreation for Union County youths. A federal grant of \$29,960 has been obtained.

Supporting Measures continued

Name and Number	Location	Description
Union County Mental Health Center U-19	Union County	Plans are to develop a Mental Health Center for Union County.
El Dorado Rent Subsidy Hous- ing Complex U-20	Union County	This proposal is to provide 152 low rent housing units. Estimated cost is \$19,000,000 and a grant will be made for this amount.
Union County Tick Control U-21	Union County	Ticks are a big problem on humans and livestock. Research and funds are needed for a tick control program.
Mosquito Control Program U-22	Union County	The salt water mosquito is a severe pest in areas where there are oil wells that produce ideal breeding grounds. Research and funds are needed for a mosquito control program.
<u>8/</u> U-24		
<u>9/</u> U-25		
<u>10/</u> U-26		
<u>11/</u> U-27		



## Section VII

# **EFFECT OF PROJECT MEASURES**





## EFFECT OF PROJECT MEASURES

The ultimate objectives of this plan are to further develop jobs and provide other economic opportunities that contribute to improving the economic and social well-being of the people in the project area. The project measures submitted in this plan are positive steps in this direction and have been designed to form a pattern of development believed essential to achieving these objectives. The success of the plan depends on the interaction of the many related project measures.

The economic base of the area is primarily agricultural and therefore depends on its land and water resources including cropland, grassland and livestock, woodland and fish and wildlife. The acceleration of treatment to protect, conserve, develop and productively utilize these resources is fundamental to maintaining and developing the economy. Directly related to this is the need for better processing and marketing facilities.

The emphasis placed on water development is highly important to the success of this plan. The use and control of the water resource is a necessary element in improved agricultural production and its development is the foundation for developing the recreation and tourism potential of the area. In addition, the lack of adequate water supplies has limited community growth and industrial expansion in most communities in the area. Development of quality water not only makes it possible for communities to grow and expand industrially, but also affords them protection from flooding during periods of excessive rainfall.

Project measures for water systems, sewage systems, recreation facilities, fish and wildlife developments, beautification, environmental preservation, solid waste disposal, pollution control and other community improvements will, in addition to improving health conditions of the area, make communities more attractive to prospective industry.

Access roads and improved transportation facilities are necessary to open up recreational areas for tourism and other developments.

Expanded vocational training and retraining programs are needed to meet the needs of changing employment opportunities created by resource development and industrial expansion.

### Immediate Benefits

The increased gross receipts to agriculture resulting from the application of land treatment measures on private lands is estimated to be several million dollars annually over a 10-year period. This increased income is expected to generate an additional several million dollars worth of income to other sectors of the economy as a result of increased spending.

Since the total cost of the proposed project measures will be distributed over a relatively long period of time, the additional funds contributing to economic growth for any time period during development would depend upon the number and size of the measures completed and those currently underway. As project measures are completed, new jobs will be created and the expenditures made in the project area will add more income to the local economy.

Based on the total estimated program cost if all measures were completed, the gross income in the project area would be increased several fold during the project installation period.

### Long Run Benefits

The installation of the proposed project measures will contribute directly to improving economic conditions of the project area. The increased income resulting from improving and developing the area's resources will also provide a continuing stimulus for economic growth.

The proposed structural measures will reduce floodwater damages substantially and furnish the necessary water supplies for domestic use, recreation and fish and wildlife developments. The funds expended for such measures will create additional jobs and the materials required for their installation will generate additional wholesale and retail trade. As industry expands and other economic growth occurs, jobs will be available for those currently unemployed. Job opportunities will also be created for those entering the labor force in the future.

Recent examples of industrial growth resulting from communities and towns developing adequate water supplies through watershed activities indicates that the potential for similar water developments will add several thousand jobs to industry.

The land use conversions expected to occur as a result of sound land use planning and the treatment of these lands will reduce erosion and prevent much of the sediment that is being deposited in the streams and lakes. These expenditures will also improve the income base and provide additional jobs.

As additional jobs are created in the area's basic employment sectors (agriculture, forestry and fisheries, mining, manufacturing, etc.) additional jobs will also be available in the service sectors. In total, these new jobs and the subsequent increase in labor income are major contributors to the objectives of the plan.

Project measures for water and sewer systems as well as measures for beautification, environmental preservation, and tourism will also contribute to objectives of the plan.

Other long term benefits to be realized from developing the area's resources are those associated with increases in the tax base. Improved roads, better schools and health facilities, and better fire protection facilities are some of the improvements expected from additional revenues. Although it is difficult to measure the benefits from such improvements, they are expected to be considerable.



CONSTITUTION AND BYLAWS OF  
SOUTHWEST ARKANSAS  
RESOURCE CONSERVATION AND  
DEVELOPMENT PROJECT SPONSORS

PREAMBLE

The purpose of the organization is to provide local leadership required for developing and carrying out a plan for the orderly conservation, improvement, development, and wise use of the natural resources, thereby improving the economic opportunities of the people within the Southwest Arkansas Resource Conservation and Development Project comprising Calhoun, Columbia, Dallas, Hempstead, Howard, Lafayette, Little River, Miller, Nevada, Ouachita, Sevier, and Union Counties.

Article I

Name

- Sec. 1      The name of the organization shall be the Southwest Arkansas Resource Conservation and Development Project Sponsors.
- Sec. 2      The organization is an independent, non-profit, non-partisan, unincorporated group having as its primary concern the acceleration of the conservation, development and proper use of the natural resources within the Resource Conservation and Development Project.

Article II

Purpose and Powers

- Sec. 1      The purpose and objectives of the organization are:
- a. To develop and carry out a RC&D Work Plan for the twelve-county area in an effort to improve economic conditions,
  - b. To cooperate and assist in carrying out local and regional development plans of other organizations and agencies.
  - c. To create a general awareness by all the people on the urgency and need for orderly development and conservation of resources of the area.



- d. To secure the required technical, financial, educational and other assistance required to develop and apply a project work plan.

Sec. 2      The powers of the organization are restricted to its purpose as stated in Section I of this article. The organization does not have any legal authority. Legal authority needed to carry out certain project measures may be furnished by the local soil and water conservation district, the government of the county in which the measure is located, or other legal entities.

### Article III

#### Membership

- Sec. 1      The sponsoring organizations are the Little River and Sevier County Rural Development Authorities, the twelve conservation districts, the twelve county governments, and the Southwest Arkansas Planning and Development District, Inc.
- Sec. 2      Members of the organization shall be (1) board members of active county rural development authorities; (2) directors of conservation districts; (3) county judges; (4) the Executive Director of the Southwest Arkansas Planning and Development District, Inc.; and (5) members of the Arkansas Soil and Water Conservation Commission representing the project area.
- Sec. 3      Individuals may be designated to represent a project sponsor (Article III, Section I) on the Steering Committee. Those individuals so designated are considered members of the organization.

### Article IV

#### Officers and Official Bodies

- Sec. 1      Elected officers of the organization shall be President, Vice-President, and Secretary-Treasurer.
- Sec. 2      The official bodies shall consist of the Steering Committee, County Resource Conservation and Development Committees, and such standing or special committees that may be authorized by a majority of the Steering Committee membership.

## Article V

### Composition of Official Bodies

- Sec. 1 The President, Vice-President, and Secretary-Treasurer shall be members of the Steering Committee and shall serve as Chairman, Vice-Chairman, and Secretary-Treasurer, respectively, of the Steering Committee.
- Sec. 2 The Steering Committee shall be composed of a representative, mutually agreed upon, from (1) each of the active county rural development authorities; (2) each of the twelve conservation districts; (3) each of the twelve county governments; (4) the SWAPDD, Inc., and (5) members of the Arkansas Soil and Water Conservation Commission representing the project area.
- Sec. 3 The County Resource Conservation and Development Committees shall be composed of (1) the five board members of active county rural development authorities; (2) the five directors of conservation districts; and (3) the County Judge. Individuals designated to represent the above bodies on the steering committee shall also become members of the respective county committees.
- Sec. 4 The President, Vice-President, and Secretary-Treasurer shall be elected by a majority of the Steering Committee membership present and voting at the annual meeting of the organization.

## Article VI

### Terms of Office

- Sec. 1 The President, Vice-President, and Secretary-Treasurer shall be elected for a period of one year. They shall continue to serve until their replacements have been elected.
- Sec. 2 Vacancies shall be filled as follows:
- Office of President -- Vice President will fill unexpired term.
- Offices of Vice-President and Secretary-Treasurer -- The President shall make appointments to fill these unexpired terms.

- Sec. 3      Membership on the Steering Committee may continue as long as recommended by County Resource Conservation and Development Committees and until their replacement has been named.
- Sec. 4      Directors of conservation districts, members of rural development authorities and County Judges are members of County Resource Conservation and Development committees so long as they occupy the aforementioned positions.

## Article VII

### Meetings

- Sec. 1      The organization shall meet in January of each year as determined by the Steering Committee. Special meetings may be called by the President or a majority of the Steering Committee membership.
- Sec. 2      The Steering Committee shall meet quarterly and as called by the Chairman or at the request of one-third of its membership.
- Sec. 3      County Resource Conservation and Development Committees shall meet at least quarterly. Special meetings may be called by the Chairman or at the request of one-half its membership.
- Sec. 4      Minutes of all meetings of the organization and the Steering Committee shall be provided each member of the organization.

## Article VIII

### Operating Funds

- Sec. 1      The Steering Committee shall estimate the amount of monies needed each year to purchase stationery, pay postage, buy needed material, etc., for the organization.
- Sec. 2      Each of the sponsoring organizations will be asked by the Steering Committee to contribute to the operating fund to the extent needed and their resources will permit.

## Article IX

### Duties

#### Sec. 1 Duties of officers are:

- a. President: preside at all meetings of the organization and the Steering Committee.
- b. Vice-President: act for the President in his absence and serve as Vice-Chairman of the Steering Committee.
- c. Secretary-Treasurer: keep records of the organization and Steering Committee, receive assessments of monies and disburse funds as authorized by the Steering Committee, notify members about meetings and perform other duties naturally incumbent upon the position.

#### Sec. 2 Duties of Committees:

##### a. Steering Committee:

- (1) The Steering Committee shall be empowered to conduct and direct the activities of the organization.
- (2) Assign priorities to project measures submitted by the County Resource Conservation and Development Committee.
- (3) Invite representatives of agencies and organizations to explain how project measures might be accomplished.
- (4) Assess sponsors for operating funds and manage monies.
- (5) Arrange for an annual or special audit of the organization's financial affairs by a qualified and disinterested person.
- (6) Organize needed committees, give charges to committees, issue instructions and appoint members thereon.
- (7) Make special request of agencies and organizations for information and assistance to prepare project plan and carry out project measures.

- (8) Cooperate with other organizations, corporations, agencies, etc., in planning and carrying out endeavors to improve the social and economic welfare of the people.
- (9) Designate one or more members to represent the organization at meetings, hearings, etc., as considered desirable.

b. County Resource Conservation and Development Committees:

- (1) Hold regular quarterly meetings and special meetings as necessary to inform the people in the counties.
- (2) Cooperate with County Development Councils to coordinate project measures and objectives of the council.
- (3) Evaluate project measures, assign priorities, and transmit measures with proper information to the Steering Committee.
- (4) Meet with interested county groups to assemble information, develop plans, prepare request for project measures, etc.
- (5) Maintain official representatives on the Steering Committee.
- (6) Appoint special committees to assemble information, prepare project measures, and follow up on project measures.

Article X

Amendments

These bylaws may be amended by a majority of all members of the organization's Steering Committee present and voting at a regular or special meeting when the notice of such meeting shall contain the proposed amendment. Notices containing information about amending the bylaws shall be mailed to all members of the organization, at least seven days before the meeting.

Reviewed \_\_\_\_\_  
(Date)



Adopted by resolution of Southwest Arkansas Resource Conservation and Development Project Sponsors Organization.

\_\_\_\_\_  
(Date)

Signed

\_\_\_\_\_  
Chairman SW Ark. RC&D Project

Attest

\_\_\_\_\_  
Sec.-Treas. SW Ark. RC&D Project



SOUTHWEST ARKANSAS RESOURCE  
CONSERVATION AND DEVELOPMENT  
PROJECT SPONSOR'S  
ORGANIZATION

SOUTHWEST ARKANSAS RC&D SPONSORS

Membership composed of board members of active county rural development authorities 1/, directors of conservation districts, County Judges, a representative of Arkansas Soil and Water Commission, and a representative of the SWAPDD, Inc.  
(84 members)

STEERING COMMITTEE

Membership composed of a representative from each active county rural development authority 1/, conservation district, county, the Arkansas Soil and Water Conservation Commission, and the SWAPDD, Inc.  
(28 members)

COUNTY RESOURCE 2/  
CONSERVATION  
AND DEVELOPMENT COMMITTEE

Composed of board members of rural development authorities 1/, directors of conservation districts, and County Judges.

- 1/ Currently active are Rural Development Authorities in Little River and Sevier Counties.
- 2/ Committees in Calhoun, Columbia, Dallas, Hempstead, Howard, Lafayette, Little River, Miller, Nevada, Ouachita, Sevier, and Union Counties.

## ACKNOWLEDGMENTS

The project sponsors gratefully acknowledge the assistance received from the following agencies and organizations in the development of this project plan:

Agricultural Extension Service  
Agricultural Stabilization and  
Conservation Service  
Arkansas Electric Cooperative, Inc.  
Arkansas Farm Bureau Federation  
Arkansas Farmers Union  
Arkansas Forestry Commission  
Arkansas Game and Fish Commission  
Arkansas Health Department  
Arkansas Highway Department  
Arkansas Department of Planning  
Arkansas Pollution Control Commission  
Arkansas Soil and Water Conservation Commission  
Arkansas State Education Department  
Arkansas State Grange  
Arkansas State Parks, Recreation and Travel  
Commission  
Bureau of Mines  
Bureau of Outdoor Recreation  
Bureau of Sport Fisheries and Wildlife  
Community Facilities Service (HUD)  
Corps of Engineers  
Economic Development Administration  
Economic Research Service  
Employment Security Division  
Farmers Home Administration  
Industrial Development Commission  
National Center for Urban and Industrial Health  
National Park Service  
Office of Economic Opportunity  
Ozarks Regional Commission  
Soil Conservation Service  
University of Arkansas  
U. S. Forest Service  
U. S. Fish and Wildlife Service  
U. S. Geological Survey

# SPONSORSHIP

The program conducted will be in compliance with all requirements respecting nondiscrimination and contained in the Civil Rights Act of 1964 and the regulations of the Secretary of Agriculture (7 C.F.R. Sec. 15.1-15.13), which provide that no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any activity receiving Federal financial assistance.

WITNESS THE SIGNATURES OF THE UNDERSIGNED SPONSORING LOCAL ORGANIZATIONS ON THE DATES SHOWN BELOW:

Calhoun County  
Conservation District

By: Emra E. Silliman  
Emra E. Silliman, Chairman

Date: 4-5-72

This action authorized at an official meeting of the Calhoun County Conservation District on

4-5-72

Attest: Fay Harrell  
Fay Harrell, Secretary

Columbia County  
Conservation District

By: R. B. McAlister  
R. B. McAlister, Chairman

Date: 5/22/72

This action authorized at an official meeting of the Columbia County Conservation District on

5/26/1972

Attest: J. W. Rowland  
J. W. Rowland, Secretary

Dallas County  
Conservation District

By: Ben C. Matthews  
Ben C. Matthews, Chairman

Date: 5-23-72

This action authorized at an official meeting of the Dallas County Conservation District on

5/5/72

Attest: C. E. Silliman  
C. E. Silliman, Secretary

Hempstead County  
Conservation District

By: Slomon Goodlett  
Slomon Goodlett, Chairman

Date: 5/24/72

This action authorized at an official meeting of the Hempstead County Conservation District on

5-26-72

Attest: Monroe R. Samuel  
Monroe R. Samuel, Secretary



Mine Creek Conservation  
District

By: J. F. Bell  
J. F. Bell, Chairman

Date: 5-24-72

This action authorized at an  
official meeting of the Mine  
Creek Conservation District on  
April 20, 1972

Attest: Wayne McLaughlin  
Wayne McLaughlin, Secretary

Lafayette County  
Conservation District

By: H. B. Eddy  
H. B. Eddy, Chairman

Date: 4-25-72

This action authorized at an  
official meeting of the Lafayette  
County Conservation District on  
4/20/72

Attest: Delmar W. Crank  
Delmar W. Crank, Secretary

Little River County  
Conservation District

By: Herman Simpson  
Herman Simpson, Chairman

Date: 5/23/72

This action authorized at an  
official meeting of the Little  
River County Conservation District  
on 4-20-72

Attest: Don Hale  
Don Hale, Secretary

Miller County  
Conservation District

By: Paul Puckett  
Paul Puckett, Chairman

Date: 5-18-72

This action authorized at an  
official meeting of the Miller  
County Conservation District on  
4-20-72

Attest: A. P. Cox  
A. P. Cox, Secretary

Nevada County  
Conservation District

By: Homer Purtle  
Homer Purtle, Chairman

Date: 5/18/72

This action authorized at an  
official meeting of the Nevada  
County Conservation District on  
4-18-72

Attest: Denman Wyllie  
Denman Wyllie, Secretary

Ouachita County  
Conservation District

By: Ward L. Warnock  
Ward L. Warnock, Chairman

Date: 5-23-72

This action authorized at an  
official meeting of the Ouachita  
County Conservation District on

5-23-72  
Attest: Jim Neeley  
Jim Neeley, Secretary

Cossatot Conservation  
District

By: Lawrence Hill  
Lawrence Hill, Chairman

Date: 5-1-1972

This action authorized at an  
official meeting of the Cossatot  
Conservation District on

5-1-1972  
Attest: Milton Garrison  
Milton Garrison, Secretary

Union County  
Conservation District

By: N. K. Calaway  
N. K. Calaway, Chairman

Date: 4/24/72

This action authorized at an  
official meeting of the Union  
County Conservation District on

4/20/72  
Attest: Toler Bardin  
Toler Bardin, Secretary

Witness the signatures of the undersigned sponsoring local organizations  
on the dates shown below:

Calloun County

By

Marion O'Mary  
Marion O'Mary, County Judge

Date 4-5-72

Little River County

By

Ray Sikes  
Ray Sikes, County Judge

Date 5-23-72

Dallas County

By

Minnie Gatling Wyllie  
Minnie Gatling Wyllie, County Judge

Date 5/22/72

Miller County

By

C. R. Burgess  
C. R. Burgess, County Judge

Date 5/18/72

Columbia County

By

R. W. Henderson  
R. W. Henderson, County Judge

Date May 22-1972

Howard County

By

Ed Reese  
Ed Reese, County Judge

Date 5-23-72

Sevier County

By

B. A. Mauldin  
B. A. Mauldin, County Judge

Date 4-27-72

Nevada County

By

Ralph Barnes  
Ralph Barnes, County Judge

Date 5-19-72

Hempstead County

By

Finis Odom  
Finis Odom, County Judge

Date 5-23-72

Ouachita County

By

Alfred Stinnett  
Alfred Stinnett, County Judge

Date 5-22-1972

Lafayette County

By

J. Martin Tackett  
J. Martin Tackett

DATE 4-25-72

Union County

By

Carlton Jerry  
Carlton Jerry, County Judge

Date 5-30-1972

Little River County  
Rural Development Authority

By: Marion H. Crank  
Marion H. Crank, Chairman

Date: 5-31-72

This action authorized at an  
official meeting of the Little  
River County Rural Development  
Authority on 5-15-72

Attest: R. G. Staggs  
R. G. Staggs, Secretary

Sevier County  
Rural Development Authority

By: Howard Shaw  
Howard Shaw, Chairman

Date: 4-28-72

This action authorized at an  
official meeting of the Sevier  
County Rural Development  
Authority on 4-28-72

Attest: H. R. Moore  
H. R. Moore, Secretary

Southwest Economic Development District  
of Arkansas, Inc.

By: Ernest L. Whitelaw  
Ernest L. Whitelaw, Executive Director

Date: 5-22-72

Arkansas Soil and Water Conservation Commission

By: Gerald C. Hendrix  
Gerald C. Hendrix, Commissioner

Date: 5-25-72







